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A Quantitative Model of the Considerations Determining Enlistment and Reenlistment Behavior

Stuart H. Rakoff, Leonard Adelman, and Jeffrey S. Mandel
Decision Science Consortium, Inc.

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This project was designed to improve the understanding and modeling of the decisions, made each year by thousands of first-term soldiers, to reenlist in the Army or to leave for civilian jobs and school.

A model of the reenlistment decision formulated from a decision-analytic perspective was developed, based on an extensive review of the literature in the areas of military personnel, job satisfaction and job change, and decision theory, as well as from focus groups conducted with first-term soldiers at Fort Benning, Georgia. A multicomponent decision-modeling approach incorporating attitudinal, normative, and affective predictors of reenlistment intent was then developed, along with a set of instruments to capture data on these components.

A multimethod analysis plan, centered on measuring convergent and divergent validity, was formulated and then applied to data gathered from three pilot group (Continued)

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19. Abstract (Continued)

sessions held at Fort Benning in April 1987. The method tested the ability of each of the three components, alone and in combinations, to correctly predict a soldier's intent to re-enlist or leave the Army.

Consistent with previous findings for an enlistment task, the analysis of the pilot test data indicated that the three components predicted reenlistment intent in the following rank order: affect, attitudinal, and normative. The results also suggest that the Army has available tools for influencing these reenlistment decisions that are much more varied than the limited set of mainly economic factors that are now predominant in these programs. Specifically, the affective component dominated the economic variables in predicting reenlistment intent for this limited sample of soldiers, and may be an important reenlistment program and policy lever in the future. *Keywords: Military personnel, Retention.*

U. S. ARMY RESEARCH INSTITUTE

FOR THE BEHAVIORAL AND SOCIAL SCIENCES

A Field Operating Agency under the Jurisdiction of the

Deputy Chief of Staff for Personnel

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NOTICES

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Decision Science Consortium, Inc.

ARI Research Reports and Technical Reports are intended for sponsors of R&D tasks and for other research and military agencies. Any findings ready for implementation at the time of publication are presented in the last part of the Brief. Upon completion of a major phase of the task, formal recommendations for official action normally are conveyed to appropriate military agencies by briefing or Disposition Form.

Learning more about how soldiers make their decisions to reenlist in the Army or to leave for a civilian job or to attend school is an important part of the Army Research Institute's agenda. The individual decisions of thousands of soldiers each year determine if Army personnel programs will be successful. This report presents the results of a pilot study conducted to develop and test new models and approaches for understanding these decisions, how they are made, and how the Army can shape its programs and policies to both assist soldiers and ensure the success of the volunteer Army. While still in the early stages of development, the results reported here hold great promise of leading to improvements in the Army's personnel management and retention programs.

EDGAR M. JOHNSON
Technical Director

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A QUANTITATIVE MODEL OF THE CONSIDERATIONS DETERMINING ENLISTMENT
AND REENLISTMENT BEHAVIOR

EXECUTIVE SUMMARY

Requirement:

To improve the understanding and modeling of the decisions, made each year
by thousands of first-term soldiers, to reenlist in the Army or to leave for
civilian jobs and school.

Procedure:

A model of the reenlistment decision formulated from a decision-analytic
perspective was developed, based on an extensive review of the literature in
the areas of military personnel, job satisfaction and job change, and decision
theory, as well as from focus groups conducted with first-term soldiers at
Fort Benning, Georgia. A multicomponent decision-modeling approach incorporat-
ing attitudinal, normative, and affective predictors of reenlistment intent was
then developed, along with a set of instruments to capture data on these
components.

A multimethod analysis plan, centered on measuring convergent and diver-
gent validity, was formulated and then applied to data gathered from three
pilot group sessions held at Fort Benning in April 1987. The method tested
the ability of each of the three components, alone and in combinations, to cor-
rectly predict a soldier's intent to reenlist or leave the Army.

Findings:

Consistent with previous findings for an enlistment task, the analysis of
the pilot test data indicated that the three components predicted reenlistment
intent in the following rank order: affect, attitudinal, and normative. Fur-
ther, the analysis demonstrated that these three components had distinct, but
related, impacts on reenlistment intent. Based on unstructured discussions
with the tested soldiers following the administration of the test instruments,
we believe that the affect component may be related to the correspondence be-
tween Army experience and the soldier's expectations at entry. We were not
able to test that relationship explicitly, however.

Utilization of Findings:

Although this research was only a pilot study with a small and unrepre-
sentative sample, its results are extremely encouraging. Future research,
with larger, more representative samples is required, along with the develop-
ment and testing of models more complex than the additive formulations tested
in this pilot study. Causal modeling methods may be particularly appropriate.

The results also suggest that the Army has available tools for influencing these reenlistment decisions that are much more varied than the limited set of mainly economic factors that are now predominant in these programs. Specifically, the affective component dominated the economic variables in predicting reenlistment intent for this limited sample of soldiers, and may be an important reenlistment program and policy lever in the future.

A QUANTITATIVE MODEL OF THE CONSIDERATIONS DETERMINING ENLISTMENT
AND REENLISTMENT BEHAVIOR

CONTENTS

CONTENTS (Continued)

INTRODUCTION

This is a report on work completed by Decision Science Consortium, Inc. for the Army Research Institute (ARI) on a project entitled "A Quantitative Model of the Considerations Determining Enlistment and Reenlistment Behavior," Contract Number MDA903-86-C-0061. The report contains a review of the literature on enlistment and reenlistment behavior, on decision analysis, and on the application of decision analysis to the reenlistment problem. Second, the report describes the field work conducted for this project, and the initial analytic model which has resulted from that field work. Finally, the report describes the logic and methodology which is proposed for extending this pilot work to build and test a decision-based model of the reenlistment decision.

LITERATURE REVIEW

The project team has conducted a comprehensive review of the litera-
ture and research findings which are relevant to understanding individual
enlistment and reenlistment decisions. We have identified the following
major issue areas and research trends which have been covered:

- military personnel and enlistment studies, including labor
  economics and youth surveys;

- decision making/decision theory.

The results of the review of each of these literatures are contained
in the following sections.

Military Personnel Enlistment and Reenlistment Studies

Economic Models. Much of the previous work on the subject of enlist-
ment and reenlistment decisions has approached employment decision making
as a problem in labor economics. (Boesel and Johnson, 1984; Black and
Fraker, 1984; Chow and Polich, 1980; Enns, 1977; Goldberg and Warner, 1982;
Cooper, 1977). In a non-conscription environment, the military is viewed
as another employer in the marketplace for employees. Boesel and Johnson
summarize this perspective when they describe the process as one in which
"the Services compete with each other and the civilian sector to attract
and retain scarce skills. In this market competition, the Services are
seen as offering jobs comprising packages of positive and negative values
(e.g., pay and security on the positive side, difficult and sometimes dan-
gerous work on the negative), which are designed to attract necessary
skills at the lowest cost. Prospective military members, for their part,
offer skill packages, also having positive and negative attributes, in an
effort to maximize the values which they can receive for their labor. Ac-
cession and retention/separation decisions emerge from the interplay of
these factors" (Boesel and Johnson, (i)).

Implementation of the all-volunteer force concept in the 1970s
provided the impetus for many of the earlier published studies (see e.g.,
Cooper, 1977; Grissmer, 1979; Fechter, 1979). Current research on these
issues is underway in response to concerns about a declining pool of
qualified and eligible manpower to serve in the Army and an improving
economy with increasing competition to military service from alternative
employment opportunities (see Dale and Gilroy, 1985).

The economist's theory of occupational choice provides the underlying
theoretical basis for much of the published empirical work. According to
this theory, individuals face a choice between civilian and military oc-
cupations, and there exists a so-called military reservation wage at which
each individual is indifferent between the two. This reservation wage is
equal to the individual's highest alternative discounted future-earnings
profile in civilian life, plus or minus a compensating differential

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reflecting relative tastes for other aspects of military service, such as patriotism, leadership opportunities, etc. Individuals may be arrayed according to their individual military reservation wages. For a given level of military pay, all individuals with a lower reservation wage will enlist. The enlistment or reenlistment decision is thus a general function of military and civilian earnings and tastes.

Although most of the empirical analyses of military accession and retention are based on this general model, there are a number of variations that have been estimated and reported. These variations are based on the following differences: (1) specifications of the functional form of the model; (2) definitions of and sources for the specific variables in the model; and (3) procedures for incorporating the effects of changing Selective Service laws and Service policies into the model.

Some of this research shows a positive relationship between unemployment and the enlistment or reenlistment decision (see, e.g., Ash et al., 1983; Cooper, 1977; Dale and Gilroy, 1984; Fechter, 1979; Fernandez, 1979; Glickman et al., 1973; Grissmer, 1979; Hause, 1973; McNown et al., 1980; Quigley and Wilburn, 1969). Incentives such as military pay relative to pay in the civilian sector, travel, training, and benefits also show significant effects in some of these studies. Postmilitary educational benefits are positively associated with intention or propensity to enlist (Bray et al., 1984; Bachman, 1983; Kim, 1982).

The preponderance of research and almost all of the operating models which the Army and others use to predict the enlistment and reenlistment behavior of current and potential military personnel, are econometric models based upon these classical economic assumptions of individual and firm decision making in a market context. These models assume that individuals behave rationally--that they have complete information on all the options and no uncertainty of the future or of the consequences of their choices. Given these assumptions, the calculus of choice is reduced to a problem in arithmetic. The difficulty is that there is no empirical evidence which supports, and a good deal which contradicts, this rational model as a description of human decision making. In the Army context, for instance, we know that potential recruits have very incomplete, and often incorrect, information about the options they face. Potential recruits, for example, significantly underestimate the value of military compensation. Young people generally tend to overvalue the economic value of education, and behave "irrationally" by over-investing in education.

Additionally, these models have focused quite narrowly on a small set of factors which individuals are presumed to consider when making these decisions. For the most part, these factors represent the major economic incentives which are used by the Army to entice enlistment or reenlistment--pay and benefits, deferred compensation, bonuses, and educational benefits. Individuals are assumed to enter or continue service in the Army because the value of these compensation items is higher than the value expected from other occupation choices. Much of the research focuses on explaining how these variables, combined with exogenous factors such as macro-economic conditions (especially unemployment) and system variables

(such as the level of recruiting effort), can predict the aggregate level of recruiting and retention success.

The dominant empirical model used by the Army and the other military departments for examining the decision to reenlist in the military is the annualized cost of leaving (ACOL) model in which an individual deciding whether to leave or stay in the military compares the returns of leaving with the returns of staying. The model captures overtime decision making (a period enlistment obligation for enlisted personnel and continuous decision making for officers) and the impact of such variables as family factors and other noneconomic variables.

The ACOL model was originally developed by Nelson, Warner, and Enns (1984) in an attempt to provide a more rational basis for evaluating the retirement reform recommendations of The President's Commission on Military Compensation. The model computes the financial incentive to remain in military service over a finite horizon as the annualized difference between military and civilian pay over that period. The model can be used to estimate enlistment rates using information about the present value of the returns to staying "s" periods, military pay, civilian earnings conditional upon staying "s" more periods, the value of military retirement annuity, the discount rate, the individual's expected lifetime, and the member's "taste for service."

The major contributions of the model were that (1) it provided a rational basis for determining the horizon over which military and civilian pay are compared, and (2) it related the estimated retention equation more directly to individual utility maximizing behavior. Prior to the development of ACOL, expected military and civilian earnings opportunities entered retention models either as a ratio or differences computed over an arbitrary time horizon, such as 1, 4, or 15 years in the future. The ACOL algorithm selects, of all possible "horizons" for future leaving points, the horizon that maximizes the annualized difference between the pecuniary returns to staying and the returns to leaving immediately.

The ACOL model explicitly models reenlistments as an occupational choice decision of the individual. The decision criterion is explicitly described and related to underlying maximizing behavior, and an attempt is made to estimate the model in a manner consistent with its theoretical structure. Nonetheless, the ACOL model does have some significant shortcomings when applied to estimates of retention behaviors:

- First, the model generates predictions of the reenlistment rate beyond the first-term reenlistment point that are deterministic and contradicted by the empirical evidence.

- Second, the model fails to account for the selectivity bias and truncation in the taste distribution as individuals with low "tastes for service" systematically select themselves out of the service (see Warner, 1980 and Fernandez et al., 1985, for alternative expositions of these points).

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To overcome these limitations, SRA Corporation has refined the original ACOL model into the ACOL-2 model by adding a random element in addition to the individual-specific "taste for service" factor. The result has been improved accuracy in predictions of retention. For a rigorous derivation of the model, and a discussion of the maximum likelihood technique used to estimate the model, see Black, Hogan, and Sylvester (1986, especially Chapters 3 and 5).

A recent application of the ACOL-2 model has been to estimate the model using data on 17,500 enlisted personnel in the Navy who were followed from their first reenlistment decision through their third decision or until separation (see Black, Hogan, and Sylvester, 1986). In addition to including ACOL factors, the model took into account unemployment rate, gender, race, Armed Forces Qualifications Test (AFQT) score, education, number of dependents, occupational category, years of service, entry prior to 1973 (draft), and entry prior to 1977 (GI Bill).

The key findings of the study were that increases in military pay and bonuses (ACOL) and the unemployment rate have a statistically significant effect on reenlistments, that this effect was robust for alternative specifications of the model, but that failure to account for selectivity bias overstated the effect of pay on reenlistment behavior by about 72 percent. Other findings included: nonwhites, females, and members with families are associated with higher probabilities of reenlisting compared to single white males; those eligible for the old GI Bill had a significantly lower probability of reenlisting; increases in first-term bonuses increase first-term reenlistment rates, but reduce the reenlistment rate at the second term when changes in the taste for service distribution is included in the model. (See Black, Hogan, and Sylvester (1986) for a more detailed discussion.)

Noneconomic Models. A second body of literature has focused on the role of noneconomic variables in the enlistment/reenlistment decisions of military personnel. Burke and Faris (1982) offer an alternative conceptual framework in which noneconomic variables play an important role in the decision to enlist and reenlist. In particular, they find that patriotic and other normative motives play a "persistent and important part in affecting the quality and composition of the all-volunteer force" (vi). Janowitz (1982) and Janowitz and Moskos (1979) reach similar conclusions. Evidence from various surveys, primarily the National Longitudinal Survey, all indicate a significant effect of normative values on the decision to enter and remain in the military (Kim, 1982). Sterling and Allen (1983) found that pride in the Army was highly related to career intent for officers, though it was not for enlisted.

Recent work by ARI based on surveys of Army recruits in 1982 and 1983, and reported in Pliske, Elig and Johnson (1984) and in Elig, Johnson, Gade and Hertzbach (1984), provides further evidence of the joint importance of economic and noneconomic values in the enlistment decision. Using both forced choice and multinomial improvement ratings, ARI assembled a wide range of possible explanations for enlistment. In particular, reasons such as "self improvement" score very highly, and there is some evidence that the underlying meaning of self improvement to these recruits is not

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purely economic, as often understood, but includes items related to in-
dividual motivation, being self-reliant, being a better individual. This
self improvement factor (from a principal-components analysis) actually
out-ranked the more common economic factors.

These findings have not been lost on Army and DoD leaders. One of
the major reasons offered for the significant improvement in the military
manpower situation in the past 5 years is the increased pride in wearing
the uniform. Patriotism is one of the important national values of the
1980s. But while some effort has been made to use these normative values
as recruiting and retention appeals, not much is known about how these mes-
sages are treated by the recipients. What pay raise would an E-4 be will-
ing to forego, for example, in return for an increase in patriotism?

Job Satisfaction and Work-Related Models. A third relevant perspec-
tive can be found in the literature on job changes and job satisfaction.
Appel (1983) reviewed recent turnover survey instruments and found in-
creased attention being paid to measuring job satisfaction, in both
military and civilian contexts, as a predictor of turnover. A number of
studies have found that attitudes toward the job environment are sig-
nificantly related to employment decisions (Owen, 1969; Holz and Gitter,
1974; Woelfel, 1976; Sterling and Allen, 1983). Variables such as loca-
tion, attitude of superiors, working conditions, and the challenge of the
job are all found to be important in various of these studies. In their
study of data from the 1979 National Longitudinal Survey, Fredland and
Little found that job satisfaction in the military is low compared to job
satisfaction in the civilian sector, and that these differences were re-
lated to the jobs, not to the characteristics of the individuals who choose
the military versus civilian employment. They further find that Service
policies designed to improve some specific components of job satisfaction
would increase overall satisfaction. The implication, untested however, is
that this improvement in expected job satisfaction would lead to higher en-
listment rates. But there is no evidence in this or similar studies of the
relative importance of these job-satisfaction variables in the individual
decision to enlist or to reenlist, compared to either economic or normative
factors. There is thus no clue for the Army as to the amount of its
resources and attention which should be devoted to these, as opposed to
compensation or image-building activities, to improve force composition and
quality.

A number of researchers find work-related factors to be important
determinants of military retention. Faris (1984) and Woelfel and Savell
(1978), for instance, find job satisfaction to be the single most important
influence on retention or the intention to reenlist (see also review of the
literature by Hunter, 1982). Job satisfaction was in these analyses more
important than economic factors. Blair and Phillips (1983) suggest that
job dissatisfaction is a major reason for high attrition rates among
younger military personnel. Similarly, Lund (1978) finds promotion oppor-
tunities, opportunities for leadership, and job security to be important
factors influencing retention. The lack of meaningful work was found to be
the major reason for separation from the Army for both first-termers and
careerists (Bonette and Worstine, 1979). Thus, job satisfaction appears to
affect retention rates both among officers and enlisted personnel. Other

research (Royle and Robertson, 1980) finds that organizational commitment or satisfaction with military life is a better predictor of reenlistment than is job satisfaction.

Family Models. The linkage between family factors and retention is less well researched, although there is increasing interest in the effects of family factors. The concerns have risen as the proportion of military personnel who are married has increased, partially a function of a larger standing and volunteer force and increasing numbers of years spent in military service (Segal, 1986). Societal trends in family creation and dissolution, child-bearing, and female labor force participation have placed pressures on the civilian as well as military family (Rakoff and Mahoney, 1984).

Numerous studies find spouse support and orientations toward military service to be important factors affecting military personnel (Bowen, 1985; Orthner and Bowen, 1982; Orthner and Pittman, 1984; Szoc, 1982; Stoloff et al., 1972; Lund, 1978; Grace and Steiner, 1978; Hunter, 1982). Lund (1978) finds that over 60 percent of officers who decided to leave or stay were influenced by their spouse's choices. Married personnel are clearly more likely to reenlist (Faris, 1984; Rakoff and Mahoney, 1984) as are those with dependents (Rakoff and Mahoney, 1984; Quester and Thomason, 1984) and those who are satisfied with their marriages (Hunter, 1982). Others argue, however, that retention is unrelated to marital satisfaction or number of dependents.

Several of these studies on family factors and retention are reviewed here in more detail. The studies concentrate on how satisfaction with family life is reflected in on-the-job performance and is ultimately tied to the decision to stay in the military.

Farkas and Durning (1982) found, in a study of 701 Navy enlisted officer men and women with dependents, that family variables have a major impact on reenlistment intentions. The best predictors of reenlistment intention were general satisfaction with life in the Navy, family pressure to leave the Navy, and sex (females had lower intention to reenlist). The best predictor of family pressure was the degree to which members perceived the Navy job as interfering with family life.

Szoc (1982) examined variables critical to the retention of 1,417 married Navy personnel. The analysis provided (1) descriptive examination of factors correlated with the retention decision, and (2) analysis of the simultaneous effects of 22 variables and scales by path analysis to simultaneously control for the effects of many variables that are causally related. He identified four variables that directly affect retention: opinion of the spouse, satisfaction with family life in the Navy, satisfaction with the Navy job, and actual years of service. Variables contributing to family-life satisfaction include marital satisfaction, effects of family separation due to deployments, social support from co-workers, satisfaction with Navy services, age of children, and family income. The variables contributing to job satisfaction include years of service, pay grade, social support, and satisfaction with pay.

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In investigating how those intending to leave differed from those in-
tending to stay, Szoc found that, in general, personnel intending to leave
were dissatisfied with more aspects of Navy life and to a greater degree
than were those intending to stay. The five more important factors con-
ducive to staying focused on the job: satisfaction with Navy job, use of
personal skills in the job, challenge of Navy job, spouse's attitude toward
the Navy, and promises of duty assignment. For those personnel intending
to leave, the five most important factors for leaving had a family focus:
overall time spent with family, family separations due to deployments,
civilian job opportunities, civilian job benefits, and total family income.
These findings suggest that the retention decision is not based on any one
aspect of being in the Service, but rather the decision is a result of the
complex interplay of many experiences and attitudes.

Orthner and Pittman (1982) tested the assumption that family factors
play a role in Air Force member job and career commitments and spouse sup-
port for members' Air Force careers. They conducted a mail survey in April
1982 across nine Air Force installations, with the final samples including
1,300 persons, 60 percent of whom were members and 40 percent of whom were
spouses. Two detailed models were developed, one for members and one for
spouses. The dependent criterion variables were job commitment and spouse
support, respectively. For members, the variables included in the path
model explained more than one-third of the variance in the dependent vari-
able (R = .36). The strongest predictors of job and career commitment were
two family variables: spouse support and the feeling that the Air Force is
a good place to rear children. Family and personal adjustment factors were
also found to be very important to the support spouses give to the career
of married members. Nearly one-fourth of the variance in spouse support
was accounted for in the path model (R = .22), with the feeling that the
Air Force is a good place to rear a child and personal well-being of the
civilian spouse being the most significant predictors of spouse support.

Grace and Steiner (1978) verify the findings about wives' attitudes
toward Navy life. Although most investigations in this area tended to
focus on husbands' reports of wives' attitudes, this study obtained
evidence directly from wives. After surveying a sample of 584 Navy wives
in 1976, half of whom were wives of career personnel, they found that a
little more than half of those sampled were willing for their husbands to
reenlist; less than one-fourth were undecided. Wives' willingness for hus-
bands to reenlist tended to vary according to the career status of
husbands; over twice as many noncareer wives were unwilling for husbands to
reenlist as compared with career wives. Here, noncareer status indicated
husbands who were committed for fewer than 8 years of Navy service. The
finding that noncareer wives have less favorable attitudes toward the Navy
is important for retention because a large part of the Navy comprises non-
career personnel who are also least likely to reenlist. It also appears
that those wives who perceived their husbands were happy, liked their
present jobs, and were experiencing career satisfaction tended to be more
likely to be willing for their husbands to reenlist.

Hickman and Hunter (1981), in their review of the work that has been
carried out on spousal attitudes toward the military and family members'
commitment to the organization, found that family factors frequently un-

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derlie the decision to depart prematurely from the military. A relation-
ship exists between family variables, such as marital satisfaction and
family harmony, and military variables, such as job satisfaction, job per-
formance, and retention. Of primary influence on decisions to .....ist a..
wives' attitudes. Of the variety of factors that influence spouses' at-
titudes toward reenlistment, the most aggravating problems for families
reported by wives are conditions that produce family disruptions, such as
family separation, frequent relocations, and long duty hours. Also, wives
appear to take into account the husbands' career intentions and apparent
satisfaction with a military career. It seems wives of Service personnel
who are committed to making the military a career are more favorable to
reenlistment than are those whose spouses are as yet uncommitted. Thus,
the service person and the spouse both influence the retention decision.

All of the above studies can be criticized for their emphasis on the
statistical significance of particular factors in the retention decision
rather than the *size* of the impact on that decision. The distinction is
important. Although family well-being is in many studies a statistically
significant determinant of retention, the relatively small difference in
retention rates between those service members with and without family
problems suggests close evaluation of the cost-effectiveness of expanded
family support programs. To make this kind of policy decision, however,
one has to evaluate the relative impact of family factors on the retention
decision, not just the statistical significance.

These studies have several other methodological and conceptual short-
comings (Bowen, 1985). Many of the studies fail to consider how the
relationship varies across the family life cycle, do not fully consider the
role of family factors in the decision-making process, and do not employ
longitudinal designs or multivariate analyses.

The above studies are also similar in that they are based on the *in-
tention* to reenlist, rather than actual behavior. Because the relationship
between intentions and behavior varies, studies of actual retention be-
havior are more useful for policy purposes. There are many studies of
military retention that have been based on discrete choice models of the
decision to reenlist. Most of these studies have focused only on the
monetary returns to leaving or remaining in the Service, although some have
included family factors in the analysis. For example, Warner and Goldberg
(1984) reported that net of economic benefits and costs, married Navy en-
listed personnel are more likely to reenlist than are unmarried personnel.
Lakhani and Gilroy (1985) and Daula and Baldwin (1984) confirmed this find-
ing for Army enlisted personnel. However, none of these investigators gave
detailed attention to the specification and mechanism of the marital and
family status effects on retention (Farkas, 1986). Models of actual be-
havior with better specifications of *both* economic and family factors are
clearly a promising avenue for future research.

  Military Culture and Organization. Military service is characterized
by frequent relocations and often by family separations and by distinctive
military orientations. Many attribute turnover to the lack of congruence
between members' orientations and those required by the military and disil-
lusionment with the military lifestyle. Faris (1984), for instance, finds

for enlisted personnel a significant effect on retention of support for the importance of military mission. Boesel and Johnson (1984), on the other hand, find when using multivariate analyses, that member concerns for relocation and family separation are not powerful predictors of reenlistment.

Youth Surveys

Probably the most comprehensive studies of recruiting information are the series of youth attitude and tracking surveys (YATS) and Reserve component attitude surveys (RCAS). Beginning in 1975 and 1978, respectively, these surveys have provided annual estimates of propensity to join the active Services and Reserve components. They have also explored the relationships of various factors to propensity such as attitudes, enlistment incentives, advertising awareness, and recruiter contact. Beginning in 1983, the YATS surveys have introduced market segmentation that defines recruiting priority groups in terms of completed education and grades (Bray et al., 1984). Lower-priority groups (young high school students and older nongraduates) were shown to have higher levels of propensity to enlist than higher-priority groups (higher aptitude nonstudents and college students). Exploratory multiple-regression analysis predicting positive propensity for the priority groups showed that psychological variables such as attitudes toward the military were more important than demographic variables. By and large, demographic variables (except race/ethnicity) were weak predictors.

Other studies have emphasized psychological factors of individuals and have studied such variables as attitudes, beliefs, norms, perceptions, intentions, and motivations. Results of the studies have consistently shown the importance of psychological variables. For example, attitudes, along with aptitude and biographical variables, have been found to predict reenlistment decisions (Guinn, 1977) and enlistment decisions (Johnston and Bachman, 1972; Segal and Bachman, 1978). Attitudes and perceptions about "limited opportunities" affect reenlistment intentions (Bachman, 1974). Military family background and belief in the importance of the military mission affect both enlistment and reenlistment decisions (Faris, 1984), and the approval of significant others (important influences) plays a role in influencing enlistment intentions (Kim, 1982).

Parents appear to have the greatest influence on youths' enlistment decisions (Kim, 1982), although relatively few parents believe they have such influence (Orkand Corp., 1983). Parents who rate the military above civilian occupations in terms of training, benefits, and opportunities for advancement tend to perceive that they have influence over these decisions (Orkand Corp., 1983).

In an extensive research effort underway for the office of the Assistant Secretary of Defense (MPFM), The Rand Corporation has created an extensive database of prospects created by choice-based sampling which combines observations from two similar surveys that had already been completed. One contained observations on enlistees, the other on non-enlistees and their combination of the two allowed new analysis opportunities which neither alone could produce. Research already published

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from this project (Hosek and Peterson, 1984, 1985) has found substantial differences in enlistment behavior (and hence decision making) among different key groups--high school graduate versus nongraduate, those anticipating or not anticipating additional education.

The 1985 DoD Survey of Military Personnel provides a more recent source of data on the attitudes and expectations of current Army enlisted members. Data from the survey were examined to identify whether there were patterns of satisfaction expressed by Army enlisted personnel with regard to major factors of military life. Initial results of these analyses are reported in the table below--more detailed analyses are being conducted now. The data in the table are the percentage of the Army enlisted respondents who said they were dissatisfied or very dissatisfied with the named aspects of Army life, by years of completed service. The list is ordered by the proportion of dissatisfaction in the 1-3 year-of-service (YOS) group, which allows us to look both for level of dissatisfaction and change in level of dissatisfaction associated with changes in length of service.

Table 1

Army Enlisted Dissatisfaction with Factors of Military Life
(% Responding Dissatisfied or Very Dissatisfied)

Factor	Years of Service		
	1-3	4-6	7-10
Personal Freedom	51	41	31
Promotion Opportunities	47	46	49
Pay & Allowances	40	39	43
Job Training	37	33	31
Current Job	34	31	28
Working Conditions	34	31	30
Assignment Stability	27	29	31
Family Environment	24	24	26
Frequent Moves	19	26	39
Work Group/Co-Workers	18	19	16
Medical Care	18	22	25
Retirement	14	21	29
Dental	14	15	29
Job Security	13	13	15
Commissaries	11	15	16
Friends	10	11	10
Post Service Education	10	16	16
Serve Country	8	5	5

Source: 1985 DoD Survey of Military Personnel

For the most junior members of the enlisted force, the level of dissatisfaction is highest with the amount of personal freedom. Over half of the Army enlisted personnel in YOS 1-3 were dissatisfied or very dissatisfied with their personal freedom, but this declines rapidly to only about 30% for those in the 7-10 YOS group. Presumably, these dissatisfied

soldiers either change their attitudes and perceptions or leave the Army. Dissatisfaction with promotion opportunities, on the other hand, does not decline with time, even for those who remain in the Army--47% of the soldiers in the YOS 1-3 group are dissatisfied or very dissatisfied with promotion opportunities, and this number remains high even through the 7-10 YOS group. Pay and allowances behaves similarly--remaining at about 40% dissatisfied or very dissatisfied in all three groups examined. The next two categories on the list have to do with the current job and working conditions, and both are high--about one-third in each group are dissatisfied or very dissatisfied. Assignment stability follows a similar pattern, as does the environment for families.

Next on the list is the frequency of moves, and not surprisingly this factor increases substantially in level of dissatisfaction as the population ages. Almost 40% of the enlisted members in YOS 7-10 are dissatisfied or very dissatisfied with the frequency of moves. About one-fifth of these enlisted soldiers are dissatisfied with their co-workers, and this remains steady in all 3 groups.

The next three categories concern benefits--medical care, retirement and dental care--and all follow a similar pattern in which the level of dissatisfaction rises sharply with increasing YOS (and families who use these services). Finally, only small numbers in each group express high levels of dissatisfaction with the remaining factors, and noticeably there is very little dissatisfaction with the opportunity to serve.

These data suggest that soldiers may well be considering a wide range of factors in evaluating their Army experience and deciding whether to reenlist, that the usual focus of reenlistment studies--pay--falls well below other issues such as personal freedom in terms of level of dissatisfaction, and that issues concerning families become much more important for soldiers in the 7-10 YOS groups.

Personalized Decision Analysis

An excellent general review of the state of the field in decision analysis is contained in Keeney (1982). The following discussion is tailored to aspects of the literature specifically relevant to this report.

Personalized decision analysis, that is, decision analysis which quantitatively models a person's judgments and perceptions in order to prescribe a course of action, has two potential roles to play in this effort. One is to aid a potential enlistee to make a personal career decision; the other is to predict what course of action he will, in fact, take, under varying conditions or policies.

The pioneers in the psychological school have been Luce at Harvard and Edwards (1954) at Michigan; the pioneers of the mathematical or logical side have been Raiffa and Schlaifer (1968) of Harvard, Lindley (1965) of London, and Howard (1966) of Stanford. Virtually all the innovative work in decision analysis over the past thirty years is accounted for by followers or students of these six men, though their approaches often diverged.

The following topics in decision analysis are of particular importance to this effort.

The Decision Tree

The central, and largely unchallenged, tenet of personalized decision analysis is that of maximizing subjective expected utility (SEU) (i.e., a weighted value of the utility of future consequences, weighted by their subjective probabilities). The dominant paradigm for implementing Max SEU, until recently, has been the decision tree (or logically equivalent formulations), typified by Schlaifer (1969). It treats future actions by the decision maker (e.g., decisions to leave or reenlist after initial enlistment in the present case) as being perfectly predictable in the light of intervening events, using the technique of "backwards induction" or (to use the Stanford term) "rollback."

The soundness of this approach has recently been challenged by Brown (1978) and deserves further examination, as does other recent work on structuring decision analysis (von Winterfeldt, 1980).

Uncertainty and Inference

In order to obtain probabilities for the consequences of alternative choices, a rich area of probabilistic modeling has developed, either for predicting the consequences themselves, or for predicting other events which bear on those consequences (for example, the probability of an

enlistee's subsequent promotion as a determinant of his standard of living).

There are two related issues: how to construct a probabilistic model; and how to develop the numerical inputs to such a model. The former includes such techniques as Bayesian updating, conditional assessment, and decomposed assessment and are reviewed in Brown et al., 1974 and Brown, 1969. The latters include probability wheels, standard urns, and calibration for observed bias, discussed in more detail in Spetzler and Stael von Holstein (1975).

Value Judgments

In measuring the attractiveness of possible consequences (e.g., lifetime income pattern for an enlistee) for use in the maximizing SEU formulation, two alternative approaches have been developed--univariate and multiattribute utility analysis. The first characterizes consequences in terms of equivalent gambles between two arbitrary reference consequences (typically a big gain or a big loss). This approach, attributed to John von Neumann, has found limited practical application in areas outside of business decisions where the consequences are essentially univariate (i.e., money).

The alternative multiattribute utility (MAU) approach has been the basis of a significant fraction of successful decision analyses, where there are multiple and potentially conflicting objectives (such as income and patriotism in an enlistment decision). The major text in this field, covering both the theory and a rich range of applications, is Keeney and Raiffa (1976). Our review has focused particularly on published case studies with the closest analogy to the enlistment situation.

Successful application of an MAU model depends on the resolution of a number of issues and the relevant literature has been combed to establish the most up-to-date developments. The issues include the following. How should relevant attributes be generated (von Winterfeldt, 1980)? How can value dependencies between attributes (e.g., double counting) be avoided or accommodated (Brown and Gustavson, 1977)? How should attributes be scaled? More specifically, how should anchor points on the scale be defined if there is no natural scale, such as money (e.g., should zero and one hundred be associated with specific scenarios--one very good and one very bad--or should the various options be compared only with each other)? How should the relative importance of attributes be measured (e.g., as "swing" weights specific to the options or some option-free, more generalized measure of importance)? Given that the time and technical sophistication of the decision-making subject (e.g., enlistee) is very limited, what simplifications are appropriate? Case studies of attempts to do "quick and dirty" MAU analysis will be investigated (e.g., Brown, 1985). In particular, what are the pros and cons of using a simple additive model rather than a more complex (e.g., multiplicative) utility function, which describes the subject's value system more accurately? To what extent should uncertainty be accommodated in an MAU model (e.g., should probabilities figure explicitly at all)?

Plural Analysis

Orthodox decision analysis has typically involved the creation and analysis of a singular SEU-type analysis, where a single internally consistent decision model is developed. Real decision makers (such as potential reenlistees) are commonly observed to look at a decision problem several different ways. A soldier may, for example, consider probable consequences directly and also anchor his choice to comparable decisions by his peers. Efforts are now being developed to cater to this plurality of perspectives, taking into account the fact that two alternative analyses may generate conflicting conclusions which must be reconciled (Brown and Lindley, 1982).

DSC is currently under grant to the National Science Foundation to explore both the behavioral and procedural aspects of this problem, which include experiments on how people use plural thinking in their normal decision making, and how formal enhancements of that process can be made (Brown et al., 1984).

Generic Decision Models

The archetypal decision analysis is customized for the choice of a specific decision maker (e.g., a given potential enlistee). It is able, for example, to accommodate the fact that different individuals will be contemplating different alternatives (e.g., default careers) and may think about their value systems quite differently (suggesting a quite different formulation in a multiattribute utility analysis).

However, in this project, we are seeking to develop generic models, at least as regards structure, which do not change from one reenlistment choice to another (except, perhaps, between broad categories). Case studies of such attempts at generalization have been reviewed, including at least one of our own (Mendez et al., 1984). We specifically looked for any articles on lessons learned from such exercises. One which emerges is that the attributes need to be defined more broadly and more exhaustively for the generic case (e.g., in the enlistment case, "monetary considerations, working conditions, other considerations," rather than more specifically defined attributes). In addition, it is likely that the scales to be used should also be less specific to improve the usefulness of a generic model.

A Multicomponent Decision Model Perspective

Fishbein and Ajzen (1975) have developed a model for predicting an individual's behavioral intent to select one from a number of alternatives. Their model has two principal components: an attitudinal and a normative component. The attitudinal component is the summation of the products of one's beliefs about the consequences of a given action (e.g., the scores in a multiattributed utility assessment) and one's evaluation of the importance of those consequences (e.g., the weights). The normative component is the summation of the products of one's beliefs that certain key individuals (called "referents") think that one should perform the behavior (i.e., select one alternative versus the others) and the individual's

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motivation to comply with any given referent. A number of researchers have found the Fishbein and Ajzen model to be an extremely good predictor of individuals' behavioral intents. For example, Pagel and Davidson (1984) recently found that the measurement instruments designed to implement the Fishbein and Ajzen model predicted women's intentions to use different contraceptive methods with a mean predictive accuracy of 84.3%. Bagozzi (1982) has demonstrated that both the attitudinal and normative components of the Fishbein-Ajzen model were significantly involved in predicting individuals' decisions to donate blood, and Ryan and Bonfield (1980) have demonstrated that both components were significantly involved in predicting whether or not people applied for loans.

Bagozzi (1982) and Ryan and Bonfield (1980) also found that a general affective component was significantly related to people's decisions. In discussing different types of decision rules, Sage (1981, p. 655) points out that, "A person who makes judgments based on intuitive affect typically takes in information by looking at the 'whole' of a situation rather than by disaggregating the situation into its component parts and acquiring data on the parts. Valuation is typically based on an attempt to determine which alternatives are pleasant or unpleasant, likable or unlikable, good or bad for individuals." And in discussing the relative contributions of cognition and affect in decision making, Zajonc (1980, p. 155) notes that "We sometimes delude ourselves that we proceed in a rational manner and weigh all the pros and cons of the various alternatives. But this is probably seldom the case. Quite often 'I decided in favor of X' is no more than 'I liked X.' Most of the time, information collected about alternatives serves us less for making a decision than for justifying it afterward."

In a research program to develop and validate measurement instruments for modeling an individual's decision to enlist or not in the Army, Adelman, Pliske, and Lehner (in preparation) present data that strongly suggest that an adequate model of career choice by young people has to consider the attitudinal, normative and (global) affective components of decision making. We believe this finding is important for two principal reasons. First, traditional decision-theoretic models (for a review of both prescriptive and descriptive models see Hammond, McClelland, and Mumpower, 1980 and Sage, 1981) have focused almost exclusively on the attitudinal component of the Fishbein and Ajzen model. Adelman, Pliske, and Lehner's research, as well as that referenced above, suggests that such a focus is inadequate for modeling individual decision processes in many situations. Second, decision-theoretic models can be readily expanded to incorporate the normative component. In many cases, all that may be required is (a) the incorporation of attributes that represent key referents' beliefs about the alternative actions, and (b) weights that reflect the relative importance the decision maker places on complying with key referents' beliefs. In contrast, it is is not clear how to incorporate a global affective component into traditional decision-theoretic models.

Given (a) the initial success of a multicomponent decision-modeling approach to the enlistment decision, (b) the implications of a multicomponent decision model for the development of decision-theoretic models in general and for reenlistment decision making in particular, and (c) the

results of initial focus groups with enlisted personnel at Fort Benning during the first half of the project, the DSC project team decided to pilot test viability of a multicomponent decision-modeling approach to the reenlistment decision. Specifically, the next section of our report presents the results of our pilot test at Fort Benning.

PILOT TEST OF A MULTICOMPONENT DECISION MODEL OF THE REENLISTMENT DECISION

This section of the report is divided into three sections: (a) the results of the initial field visit and focus groups with soldiers at F rt Benning conducted within the first half of the project; (b) our methodological approach to implementing a pilot test of the multicomponent decision-modeling perspective to the reenlistment decision; and (c) the results of the pilot test. Each section is considered, in turn.

Initial Field Visit and Focus Groups

In order to begin the process of translating these literature review findings into a model of the reenlistment decision of individual soldiers, DSC staff conducted two focus groups with soldiers at Fort Benning, Georgia in October 1986. Each session was attended by 10-12 first-term soldiers, all with an MOS of 11-B. The sessions lasted approximately two hours each, and were tape-recorded for review and analysis by DSC staff after the sessions. Our conclusion, after sitting in the two sessions and reviewing the tapes, was that the soldiers were being candid and the insights we achieved into the factors they consider when deciding about reenlistment are valid for use in building the initial model.

Based upon the literature reviewed and the two Fort Benning focus groups, we defined an initial structure for a multiattribute model of the reenlistment decision. The model is presented graphically in Figure 1.

```
                    REENLIST (YES/NO)
                           |
        _____|_____
        |                  |              |            |
    ATTITUDES        JOB SATISFACTION   LIFESTYLE    ECONOMIC
        |                  |              ·|            |
 (Patriotism)         (Co-Workers)    (Discipline)   (Pay)
 (Personal Freedom)   (Schools)       (Moves)        (Benefits)
 (Perception of Fairness)  (Workload)  (Army Life)
                      (Work Quality)   (Family)
```
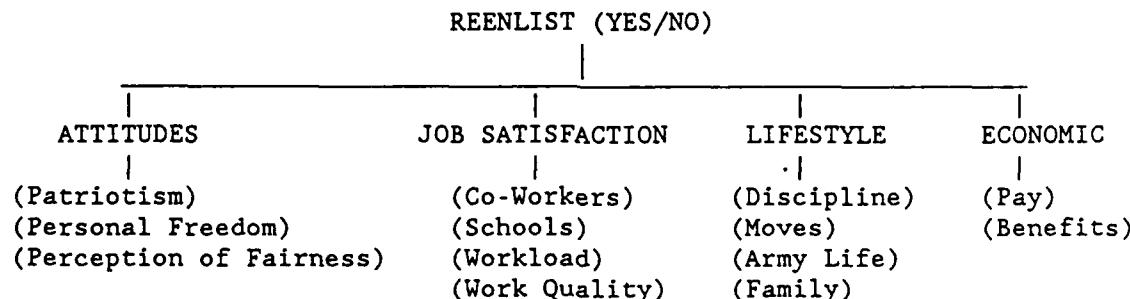
Figure 1. Initial model of reenlistment.

We defined the model only down to the four major attributes of Attitudes, Job Satisfaction, Lifestyle, and Economics. These are presented in approximately the order of importance (left to right) that emerged from our focus group discussions. That is, the soldiers we met with were much more vocal in citing attitudinal items--patriotism, want to serve country-- and issues of job satisfaction (especially having meaningful and fun work to do), than they were in citing either lifestyle or economic issues. There is no assumption made, however, that this finding would hold for

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other groups of soldiers--i.e., those in other occupational groups or with more years of service than those interviewed.

This model could be defined down to more fine-grained bottom-level attributes subsidiary to the major attributes shown in the model, but there appeared to be little value in doing so at this point in the project. This was especially the case given the limited focus group samples which might well be misleading if carried too far. It was also not clear that the thinking of these enlisted personnel was much deeper than these quite general factors, except for very specific factors for particular individuals which shaped their response on these four major attributes but were difficult to generalize. Our judgment was that, at this point, we would make more progress with a model that was quite broad rather than trying to force respondents to cope with a wide range of more detailed lower-level attributes. Moreover, examination of Figure 1 indicates the presence to some extent of all components of a multicomponent decision model.

Methodological Approach to Implementing a Multicomponent Decision Modeling Perspective to the Reenlistment Decision

Initial Operationalization of the Components. Figure 2 presents a pictorial representation of the multicomponent decision model as applied to the reenlistment decision, using Fishbein and Ajzen (1975) and Adelman, Pliske, and Lehner's (in preparation) terminology.
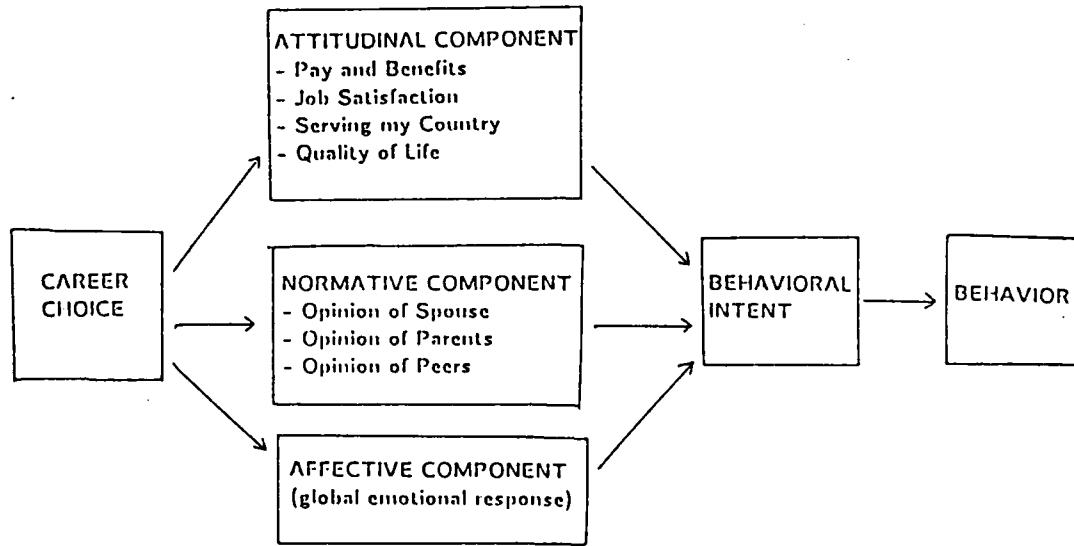
Figure 2. A pictorial representation of the multicomponent decision model.

Quite simply, it was assumed that soldiers evaluate their career choices of reenlisting or not by considering attitudinal factors about the consequences of each career choice (e.g., pay and benefits, job satisfaction, serving one's country, quality of life), normative factors in terms of the opinion of important other people (e.g., spouse, parents, and peers) and their global affective (or emotional) response to the choice. It is on the basis of this multicomponent evaluation that the person reaches an intention to select a particular career choice. This intention is then followed by some actual behavior, i.e., the soldier does or does not actually reenlist. Since the project team was not in a position to track the participants in our pilot test to see if they actually reenlisted or not, (i.e., their behavior), our focus was on evaluating the adequacy of a multicomponent model for predicting intent.

The arithmetic representation and parameter definitions of the Fishbein-Ajzen model, with an illustration of how it applies to the individual Army reenlistment decision, are presented in equations (1) and (2) below.

$$B - BI - (A_B)w_1 + (SN)w_2 \tag{1}$$

$$- \left[\sum_{i=1}^{n} B_i E_i \right] w_1 + \left[\sum_{i=1}^{m} NB_i MC_i \right] w_2 \tag{2}$$

where: B — the particular behavior (e.g., Army reenlistment);

BI — the behavioral intention to perform the behavior (e.g., I do/do not intend to reenlist in the Army);

A_B — the attitude toward performing behavior B (e.g., after taking all things into consideration, I think staying in the Army scores the highest);

SN — the subjective norm (e.g., after taking all things into consideration, my parents, friends, and spouse have a positive opinion about my decision to reenlist/not reenlist);

B_i — the belief (subjective probability) that performing the behavior will lead to consequence X_i (e.g., if I reenlist in the Army, I am sure to get a more satisfying job);

E_i — the evaluation of X_i (e.g., job satisfaction is terribly important to me);

NB_i — the perceived expectation of Referent i (e.g., my parents really do/do not want me to reenlist);

MC_i — the motivation to comply with Referent i (e.g., what my parents expect of me does/does not matter to me);

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n   -   the number of salient consequences;

m   -   the number of salient normative beliefs; and

w_1, w_2 -   empirically derived regression weights for predicting BI on the basis of A_B and SN, respectively.

In the current application, attitudinal belief (B_i) and evaluation (E_i) scales were developed for the following four attributes: annual pay and benefits, job satisfaction, serving one's country, and satisfaction with life style. The normative belief (NB_i) and motivation to comply (MC_i) scales were developed for three referent groups: spouse, parents, and peers (friends and coworkers). The attributes and referents were selected on the basis of the results of the two focus groups held at Fort Benning earlier in the project and previous Army reenlistment research as being representative of the factors and influence groups, respectively, considered by young people when deciding to reenlist or not in the Army. In addition, three behavioral intent (BI) questions were used for each of two career choices (Army reenlistment vs. a civilian job). As required by the Fishbein-Ajzen model, these intent questions had a specified time limit within which the behavior had to be made--at the end of the current term of service. As is typical among researchers using the Fishbein-Ajzen model (e.g., see Pagel and Davidson, 1984, and Ryan and Bonfield, 1980), an anchored, in our case eleven-point, rating scale was used to obtain the participants' values for the BI, B_i, E_i, NB_i, and MC parameters. Table 2 presents examples of the questions (and scales) we used to measure each parameter.

The global affective component was operationalized using a semantic differential and additional questions based on previous Army reenlistment survey instruments. The semantic differential, originally developed by Osgood, Suci, and Tannenbaum (1957), uses bipolar adjective rating scales to develop (typically) an affective measure of a given concept. Relying on Fishbein and Ajzen's (1975) overview of attitudinal research using the semantic differential, Adelmar, Pliske, and Lehner (in preparation) developed an instrument for evaluating career choices using seven-point rating scales for the following seven bipolar adjectives: dislike:like, unpleasant:pleasant, disagreeable:agreeable, disapprove:approve, unenjoyable:enjoyable, unfavorable:favorable, and bad:good. This instrument was used in our pilot test to obtain an affective measure (or score) for reenlisting in the Army and for taking a civilian job.

Extending the Operationalization of the Components via a Convergent and Discriminant Validity Focus. The focus of the pilot study was to obtain information on the relative importance of attitudinal, normative, and affective components regarding our respondents' behavioral intent to reenlist or not. To accomplish this, we need to first demonstrate that (1) our concepts of attitudinal, normative, and affective decision components were distinctly different constructs (or traits), and (2) that the measurement instruments were, in fact, measuring the concepts that we said they were measuring. We used the concepts of convergent and discriminant validity

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Table 2

Example of the Questions and Scales Used for
Measuring the Parameters in the Attitudinal and
Normative Components of the Fishbein-Ajzen Model
(for the Army Option Only)

Behavioral Intent Question

    I intend to reenlist when my current tour of duty ends.

```
|——|——|——|——|——|——|——|——|——|——|
0    1    2    3    4    5    6    7    8    9    10
Improbable                                   Probable
```
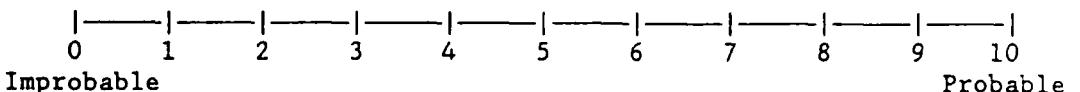
Attitudinal Belief Question

    I am satisfied with the pay and benefits I would receive if I reen-
listed in the Army.

```
|——|——|——|——|——|——|——|——|——|——|
0    1    2    3    4    5    6    7    8    9    10
False                                            True
```
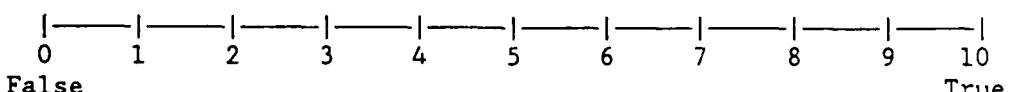
Attitudinal Evaluation Question

    The pay and benefits I receive are important to me.

```
|——|——|——|——|——|——|——|——|——|——|
0    1    2    3    4    5    6    7    8    9    10
False                                            True
```
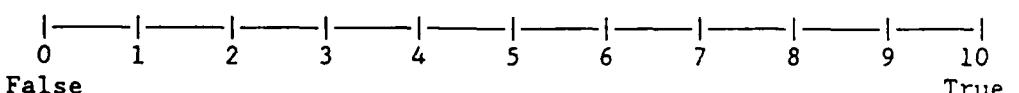
Normative Belief Question

    My spouse thinks I should reenlist in the Army.

```
|——|——|——|——|——|——|——|——|——|——|
0    1    2    3    4    5    6    7    8    9    10
False                                            True
```
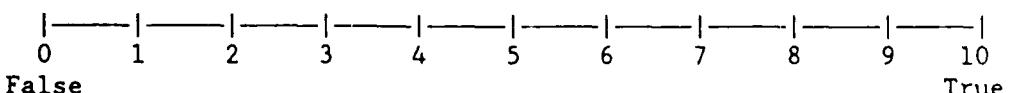
Motivation to Comply Question

    It is important to me to follow the thinking of my spouse.

```
|——|——|——|——|——|——|——|——|——|——|
0    1    2    3    4    5    6    7    8    9    10
False                                            True
```
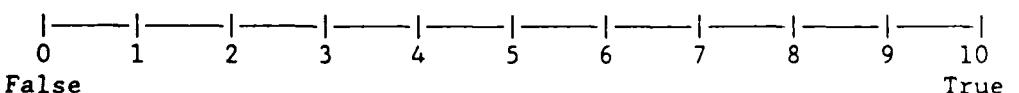
inherent in a multitrait-multimethod matrix to perform this demonstration (Campbell and Fiske, 1959; Hammond, Hamm, and Grassia, 1986).

Table 3 presents the predicted convergent and discriminant validity matrix we expected to obtain from our data, where the cell entries indicate the extent to which the option with the highest score is predicted by instruments measuring the model components. It shows that we predict higher correlations among the methods measuring the same trait (along the diagonal) than between methods measuring different traits (i.e., off the diagonal). It also shows that, consistent with the findings of Adelman, Pliske, and Lehner (in preparation) in an enlistment context: (a) the affective component alone will be a better predictor of behavioral intent than either the attitudinal component alone or the normative component alone; (b) combining the attitudinal and normative components will result in the same level of predictability as the affective component alone; and (c) that using an additive model with all three components will not result in better prediction than that achieved with either the combined attitudinal and normative component or the affective component.

As shown in Table 3, three methods in addition to the Fishbein and Ajzen approach were used to obtain scores for the attitudinal and normative components of the model. The method titled "importance rating" presented all seven attributes (i.e., pay and benefits, job satisfaction, serving country, quality of life, opinion of spouse, opinion of parents, and opinion of peers) to the respondent at the same time, and then asked the respondent to rate each attribute on an eleven-point importance scale. This method differed principally from the Fishbein-Ajzen method in that, when respondents used the latter, they considered the importance of each attribute individually for each career option. The importance weights for the first four attributes were multiplied against their corresponding attribute beliefs (or scores) for an option, which were obtained, for example, using the Fishbein-Ajzen approach, and then the four products were summed to obtain the attitudinal component score for that option. The importance weight for the last three attributes which are analogous to the "motivation to comply" values in the Fishbein-Ajzen approach, were multiplied against the corresponding attribute scores (i.e., the "normative beliefs" obtained using the Fishbein-Ajzen approach) for the option, and then summed to obtain the normative component score using the "importance rating" method for the option.

The "rank and compare" method is conceptually quite similar to Edwards' (1977) ratio-estimation techniques for riskless choice (called SMART for Single Multi-Attribute Rating Technique). The "rank and compare" method was implemented using a three-step procedure. First, participants were asked to rank-order the seven factors in terms of the relative importance of each of them for Army reenlistment. Second, they assigned a weight of 100 to the most important factor. And, third, they assigned ratio importance weights to the remaining factors. A number of examples were given of ratio weights to help the participants understand that, for example, if they gave their designated factor #5 a weight of 50, that score means that factor #5 was half as important as factor #1. The attitudinal component score was the sum of the products of the "rank and compare" weights and the "Fishbein-Ajzen" beliefs for the four attitudinal

Table 3

Convergent and Discriminant Validity Matrix for Predicting the Option (Reenlist vs. A Civilian Job) with the Highest Score on that Concept (i.e., Trait)*

	METHODS FOR ASSESSING SCORE ON ATTITUDINAL COMPONENT			METHODS FOR ASSESSING SCORE ON NORMATIVE COMPONENT			METHODS FOR ASSESSING AFFECTIVE COMPONENT
	Fishbein & Ajzen Imp Rating	Rank & Compare	Policy Capture	Fishbein & Ajzen Imp Rating	Rank & Compare	Policy Capture	Semantic Differential "Affect" Questions
ATTITUDINAL — Fishbein & Ajzen Importance Rating, Rank & Compare, Policy Capture	HIGH			[REPLICATES]			[REPLICATES]
NORMATIVE — Fishbein & Ajzen Importance Rating, Rank & Compare, Policy Capture	LOW			HIGH			[REPLICATES]
AFFECTIVE — Semantic Differential "Affect" Questions	LOW			LOW			HIGH
INTENT	LOW TO MODERATE			LOW TO MODERATE			MODERATE TO HIGH

MODERATE TO HIGH

HIGH

*NOTE: For each of the methods used to assess the importance of factors comprising the attitudinal and normative components, we used two methods for obtaining the scores of the options on these factors.

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attributes. The normative component score was the sum of the products of the "rank and rate" weights and the "Fishbein-Ajzen" beliefs for the three normative attributes.

The last method was Hammond Stewart, Brehmer, Steinmann's (1975) statistical decomposition technique (using multiple-regression analysis) called "policy capturing." The policy-capturing technique was implemented by creating 70 profiles of hypothetical job situations. Each hypothetical job situation was defined in terms of a value on each of the seven attributes, and whether or not it was an Army or Civilian Job. To help illustrate this example, here is an illustration of a job situation and how it was presented to respondents.

ARMY JOB
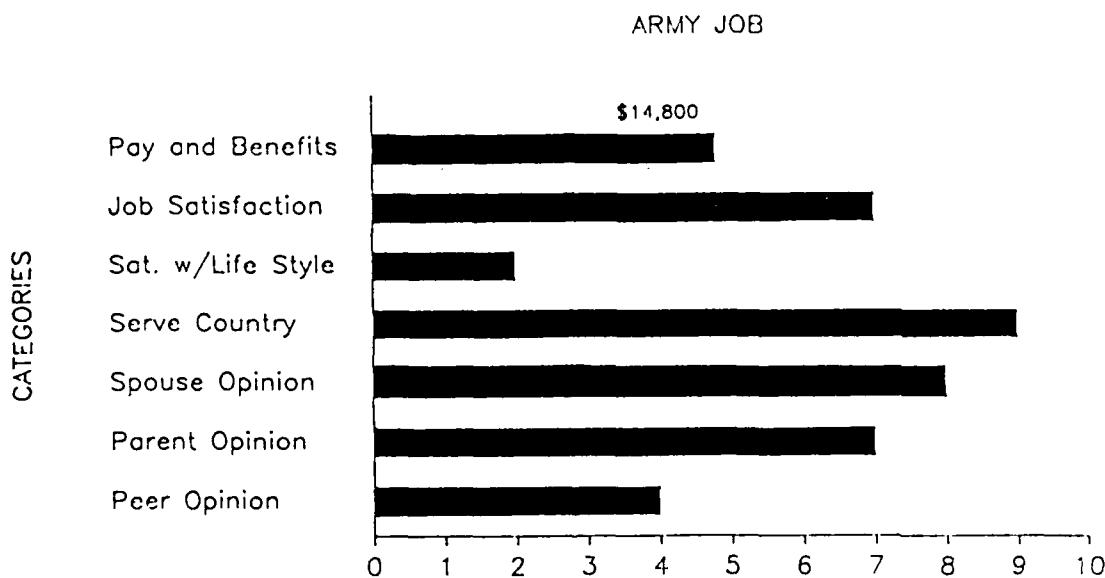
This is a job, in the Army, whose annual pay and benefits are worth $14,800. The job satisfaction is high (7). You are dissatisfied with your life style (2), but the extent to which you are serving your country is high. Your spouse's opinion of the situation (taking everything into account) is high (8). Your parents' opinion of the situation is high. Your peers' (friends' and coworkers') opinion of the situation, however, is moderately low (4). Now, taking all of this information into account, how would you rate this job situation on the following eleven-point scale:

0	1	2	3	4	5	6	7	8	9	10
No Chance		Less Likely			Unsure		More Likely			Absolutely
I Would		Than Not					Than Not			I Would
Certainly		To Take					To Take			Certainly
Not Take		This Job					This Job			Take This Job
This Job										

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Fifty (50) of the 70 profiles, and each respondent's judgments, were
input into multiple regression analyses designed to obtain weights on the
nine factors (i.e., the seven attributes and Army vs. Civilian Job) for
each respondent. Specifically, the 50 hypothetical job situations repre-
sented 50 values on nine independent variables (X_i) in a multiple-
regression analysis; the 50 desirability ratings for each respondent repre-
sented the values on the dependent variable (Y_{ij}). This is represented in
Equation (3).

$$Y_{ij} = \sum_{k=1}^{m} b_{ik}X_{jk} + C_i + e_{ij} \tag{3}$$

where: Y_{ij} = the judgment of individual i for profile j;

     m = the number of attributes;

     b_{ik} = the raw score regression weight for individual i on at-
tribute k;

     X_{jk} = the value of attribute k on profile j;

     C_i = the constant term for individual i; and

     e_{ij} = the residual error from the model of individual i for
profile j.

The remaining twenty profiles and judgments are used to "cross validate"
the obtained regression equation for each respondent. Fourteen of the 70
profiles were repeated so that we could obtain a test-retest condition for
each respondent, thus representing their judgmental consistency. And, as
with the three earlier methods, each participant's weights (appropriately
scaled) for the attitudinal attributes were multiplied by the corresponding
(Fishbein-Ajzen) "belief" scores and then summed to obtain the normative
component score.

It is important to make the following points at this time in the dis-
cussion. First, as a summary, we have indicated how four methods (i.e.,
Fishbein-Ajzen, importance rating, rank and rate, and policy-capturing)
were used to obtain attitudinal and normative component scores for each
participant for each of the two options (reenlisting vs. taking a civilian
job). Consistent with a convergent and discriminant validity approach, we
predicted that methods measuring the same component would correlate higher
(i.e., in terms of the percentage of participants for which the methods
predicted the same career choice with the highest component score) than
methods measuring different components. Moreover, we predicted that the
attitudinal component scores would correlate higher with participant's in-
tent than the normative component scores. We operationalized this test in
terms of a "hit rate" i.e., in terms of the percentage of participants for
which the component predicted the career choice with the highest mean be-
havioral intent rating.

Second, we predicted that an additive model combining the attitudinal and normative component scores would outpredict either of the two components at a statistically significant level. Such an additive model was developed for each of the four methods discussed above.

Third, the four methods discussed all represent different approaches for obtaining the importance weights (E_i and MC_i) in equation (2). These techniques were proposed for four principal reasons. First, the research team thought Army personnel would be able to complete these techniques in a group setting. In contrast, we were not sure that enlisted personnel would be able to complete, for example, traditional decision-theory weighting techniques like Keeney and Raiffa's (1976) lottery technique for risky choice or many of those proposed earlier in this report. Second, Adelman, Sticha, and Donnell (1984) utilized these (and other) techniques in a previous study; consequently, this pilot-testing effort represents a means for replicating previous research. Third, as Hammond, McClelland, and Mumpower (1980) pointed out, these techniques represent different theoretical perspectives on how to obtain an individual's weights for multiple attributes; consequently, their evaluation has theoretical value. And, fourth, the different techniques have practical implications and tradeoffs that must be dealt with if the techniques are to be incorporated into any decision aid for use by Army personnel and if they are to be used for policy-setting purposes. This last reason is considered in further detail in the discussion section of the report.

Fourth, in all cases, the importance weights were combined with the beliefs (or, option scores) obtained using the Fishbein-Ajzen approach (i.e., B_i and NB_i) to obtain individual and combined component scores. This is an obvious limitation from a multitrait-multimethod perspective. Consequently, the research team also used a second approach for obtaining the beliefs. Specifically, each participant was asked to fill-in fourteen bar graphs indicating the level for each of the seven attributes they expected to obtain for each of the two options. These levels (i.e., scores) were then combined with the (appropriate) weights generated by the four different methods to obtain a second set of individual and combined component scores.

Fifth, as indicated in Table 3, two methods in addition to the semantic differential were used to obtain affective component scores. The first method was referred to as "affect questions". Specifically, participants answered the three questions shown in Table 4 (for the Army option only) for each of the two options on an eleven-point scale. Each participant's mean response for these three questions represented the participant's second affective component score. The third affective component score was generated using the policy-capturing approach. Specifically, the difference between each participant's regression coefficients for Army and for Civilian, was used as a measure of which option, independent of the seven attributes, had the biggest impact on the participant's desirability ratings. Again, consistent with a convergent-discriminant validity perspective, it was predicted that the three affective-oriented methods would correlate higher among themselves (i.e., in terms of the percentage of participants for which the three methods predicted the same option with the highest affective component score) than with the predictions of methods

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measuring the attitudinal and normative components. Moreover, it was hypothesized that the affective component would be the best single component predictor of intent; that is, that it would have the highest "hit rate" in terms of the percentage of participants for which the component predicted the career choice with the highest mean intent rating.

Table 4

The Three "Affect Questions" for the Army Option

> From a purely emotional perspective, how satisfied or dissatisfied would you feel if you reenlisted in the Army at the end of your current term of service?
>
> Taking all things together, how satisfied or dissatisfied are you with the Army as a way of life?
>
> How pleased or displeased would you feel if you reenlisted in the Army at the end of your current term of service?

   Procedures. This section of the report briefly overviews how the methods described above for implementing, from a convergent-discriminant validity perspective, a multicomponent decision-modeling approach to the reenlistment decision were actually administered to soldiers during the pilot test. Specifically, three sessions were conducted at Fort Benning on April 27, 1987 with enlisted personnel within six (6) months of their Expiration of Term of Service (ETS) date. Each session was with approximately 10 to 15 soldiers but, in total, we obtained complete data for only 33 participants. Each session was no more than 90 minutes in length. The first part of the session was dedicated to obtaining data for the above methods; the last part of the session was an open-ended discussion of the soldier's reenlistment decision-making process. Data were obtained by using an overhead projector to present all instructions and questions for implementing the methods to the participants; their responses were recorded on (anonymous) answer sheets. Appendix A contains a hard copy of all the vugraphs, except for the actual 70 hypothetical job situations used to implement the policy capturing used in the session.

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Convergent and Divergent Validity Analysis

Table 5 presents the convergent and divergent validity matrix, defined in terms of the number of misses (or disagreements), for all the methods used to obtain individual attitudinal, normative, and affective component scores, using the Fishbein-Ajzen beliefs scores.

Table 5

Number of Misses for Convergent and Divergent Validity
Matrix Using all Methods and Fishbein-Ajzen Scores

		Methods for Assessing Scores on Attitudinal Component				Methods for Assessing Scores on Normative Component				Methods for Assessing Scores on Affective Component		
		F&A	IMPT	R&C	PC	F&A	IMPT	R&C	PC	SD	EMO	PC
Attitudinal Component	F&A	--	--	--	--							
	IMPT	1	--	--	--		Replicates				Replicates	
	R&C	0	1	--	--							
	PC	2	1	2	--							
Normative Component	F&A	9	8	9	9	--	--	--	--			
	IMPT	9	8	9	9	2	--	--	--		Replicates	
	R&C	9	10	9	11	2	4	--	--			
	PC	9	8	9	9	8	10	10	--			
Affective Component	SD	6	7	6	8	9	9	9	7	--	--	--
	EMOTION	4	5	4	6	7	7	7	5	2	--	--
	PC	9	10	9	9	14	12	14	12	5	7	--
Intent		5	6	5	7	7	6	8	8	3	3	6
Number of Participants w/Usable Data		33	33	32	33	33	33	32	33	33	33	33

Note: Used F&A Rating Scales

Table 6 presents the mean values for each cell in the matrix. Examination of Tables 5 and 6 indicates the following three points. First, as predicted, we obtained higher convergent validity than divergent validity for all three components. In all cases, methods measuring the same component identify the same option with the highest component score to a much greater extent (i.e., have fewer misses) than methods measuring different components. Second, as predicted, the attitudinal component was a better predictor of intent than the normative component, and the affective component was a better predictor of intent than the attitudinal component.

Table 6

Mean Number of Misses for Convergent and Divergent Validity
Matrix Cells Using all Methods and Fishbein-Ajzen Scores

	Methods for Assessing Attitudinal Component	Methods for Assessing Normative Component	Methods for Assessing Affective Component
Attitudinal Component	1.17	----	----
Normative Component	9.00	6.00	----
Affective Component	6.92	9.33	4.67
Intent	5.75	7.25	4.00

Table 7 presents the convergent and discriminant validity matrix for all methods using the "bar-graph" approach to obtaining the scores; Table 8 presents the mean values for all values. Again, higher convergent than divergent validity measures were obtained for all three components. However, the number of misses for all cells in the matrix, including intent, were generally higher using the scores obtained by the bar-graph approach. This is most noticeable for the number of misses of the attitudinal component when predicting intent; specifically, it was worse--not better--than the the normative component when using the "bar graph" scores. The affective component was again the best single component predictor of intent, for it was not affected by the "bar-graph" approach to obtaining scores.

In total, the convergent and discriminant validity matrices clearly support the hypothesis that the attitudinal, normative, and affective components of the proposed multicomponent decision model are distinct, albeit related constructs. Moreover, except for the attitudinal component with bar graphs, the mean value for each component individually predicted intent at a level greater than chance (i.e., assuming a "hit rate" of .50) using a binomial test. Consequently, our attention in the analyses turned toward evaluating alternative models for combining component scores. This analysis was limited to modeling predictability using all the methods for obtaining weights, but only the Fishbein-Ajzen method for obtaining scores, because of the fewer number of misses in general using the Fishbein-Ajzen than the "bar-graph" method for obtaining scores, particularly for the attitudinal component.

Assessing the Predictability of Additive, Multicomponent Models

Table 9 is a summary table presenting the intent predictability of different component models. Intent predictability is presented in terms of misses, that is, in terms of the number of participants for whom the model predicted a career choice that did not have the highest mean intent rating for that participant; consequently, lower values in Table 9 represent better predictability just as in Tables 5 through 8. The first four sections of Table 9 represent the predictability of different attitudinal and/or normative component models using the four weighting methods. The additive

Table 7

Number of Misses for Convergent and Diverge : Validity
Matrix Using all Methods and "Bar Graph" Scores

		Methods for Assessing Scores on Attitudinal Component				Methods for Assessing Scores on Normative Component				Methods for Assessing Scores on Affective Component		
		F&A	IMPT	R&C	PC	F&A	IMPT	R&C	PC	SD	EMO	PC
Attitudinal Component	F&A	--	--	--	--							
	IMPT	5	--	--	--	Replicates				Replicates		
	R&C	0	5	--	--							
	PC	7	4	7	--							
Normative Component	F&A	9	10	9	12	--	--	--	--	Replicates		
	IMPT	12	11	12	11	7	--	--	--			
	R&C	9	8	9	12	2	7	--	--			
	PC	12	11	12	13	7	8	5	--			
Affective Component	SD	15	16	15	14	8	9	8	7	--	--	--
	EMOTION	13	14	13	12	6	7	6	7	2	--	--
	PC	14	14	14	13	11	12	13	12	5	7	--
Intent		14	14	14	13	9	8	9	8	3	3	6
Number of Participants w/Usable Data		33	33	33	33	33	33	33	33	33	33	33

Note: Used Bar Graphs

Table 8

Mean Number of Misses for Convergent and Divergent Validity
Matrix Cells Using all Methods and "Bar-Graph" Scores

	Methods for Assessing Attitudinal Component	Methods for Assessing Normative Component	Methods for Assessing Affective Component
Attitudinal Component	4.67	----	----
Normative Component	10.75	6.00	----
Affective Component	18.67	8.83	4.67
Intent	13.75	8.50	4.00

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Table 9

Intent Predictability (in Terms of the Number of Misses)
of Different Component Models Using Different Methods
Using Fishbein-Ajzen Scores

"Fishbein-Ajzen" Method

    Normative Component Model   - 7 misses
    Attitudinal Component Model   - 5 misses
    Equally Weighted, Attitudinal + Normative Component Model - 4 misses
    Differentially Weighted, Attitudinal + Normative
       Model (Approaches 1 and 2)   - 6&3 misses

"Importance" Method

    Normative Component Model   - 6 misses
    Attitudinal Component Model   - 6 misses
    Equally Weighted, Attitudinal + Normative Component Model - 3 misses

"Rank and Compare" Method

    Normative Component Model   - 8 misses
    Attitudinal Component Model   - 5 misses
    Equally Weighted, Attitudinal + Normative Component Model - 2 misses

"Policy Capturing" Method

    Normative Component Model   - 8 misses
    Attitudinal Component Model   - 7 misses
    Affective Component Model   - 6 misses
    Equally Weighted, Attitudinal + Normative Component Model - 5 misses

Affective Component Model (Semantic Differential or
"Affect Ques.")   - 3 misses

Equally Weighted, Attitudinal, Normative, + Affective
Component Model

    "Fishbein-Ajzen" Method   - 3 misses
    "Importance" Method   - 2 misses
    "Rank and Compare" Method   - 2 misses

Differentially Weighted, Attitudinal, Normative + Affective Component Model

    "Fishbein-Ajzen Method (Approaches 1 and 2)   - 4&3 misses
    "Policy Capturing" Method   - 6 misses

model combining the attitudinal and normative components is the basic multicomponent model proposed by Fishbein and Ajzen, 1975. The remainder of Table 9 evaluates alternative models, using alternative methods, that also include the affective component.

Equally weighted models were developed for each of the four weighting techniques by simply averaging their attitudinal and normative component scores. Examination of the first four sections of Table 9 indicates that combining these equally weighted, additive models improved prediction over that achieved by either component alone for all four methods. However, using binomial tests and the hit rate for the normative component as the baseline, only the improvement gained by the equally weighted model developed with the "Rank and Compare" technique was statistically significant (p<.01). The equally weighted attitudinal and normative component model was not a statistically better predictor than the attitudinal component alone for any of the four methods. Moreover, the equally weighted, attitudinal and normative model developed by the "Rank and Compare" method was not significantly better than the corresponding equally weighted models developed by any other method.

Although it would have been extremely unlikely to improve prediction at statistically significant levels, over that achieved with the equally weighted, attitudinal and normative component models (except for policy capturing), two differentially weighted, attitudinal and normative component models were developed using the Fishbein-Ajzen method because this is the basic multicomponent model, as represented in equation (2), proposed by Fishbein-Ajzen. The first model was developed by (a) regressing the 33 participants' mean intent score for the Army option on their attitudinal and normative component scores for the Army option, and (b) regressing the 33 participants' mean intent for the Civilian Job option on their attitudinal and normative component scores for that option. The obtained regression coefficients (i.e., differential weights) for predicting Army and Civilian Job intent then were multiplied by each participant's attitudinal and normative component scores for each respective option, and then summed to obtained combined scores. The option for each participant with the highest predicted intent score represented the "predicted option" for the participant. The second model was developed by regressing the mean intent rating for each of the two career choices for each of the thirty-three participants on the attitudinal and normative component scores for the 66 cases (i.e., 33 participants x 2 career choices) to obtain the weights. The squared multiple-regression coefficients were .303 and .286 for the Army and Civilian Job models in the first analysis, and .597 for the regression model in the second analysis. The differential weights obtained in the first analysis predicted the career choice with the highest mean intent rating for 27 of the 33 participants. The differential weights obtained in the second analysis correctly predicted the option with the highest mean intent rating for 30 participants, only one better than that obtained with an equally weighted model.

As Table 9 indicates, the affective component models generated by using either the semantic differential or the "affect questions" also predicted the option with the highest intent rating for 30 participants. Equally and differentially weighted models combining all three components

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were developed using different methods to see if prediction could be improved, even at a minimal level, by adding the affective components to the basic multicomponent model. Equally weighted models were developed for the "Fishbein-Ajzen", "Importance" and "Rank and Compare" methods by first, rescaling (as appropriate) the attitudinal, normative, and semantic different scores for both options for all three methods for all participants so that all scores were on a 0 to 10 scale and then, second, averaging the rescaled component scores for each option for each method for each participant to obtain intent predictions. An equally weighted model incorporating the affective component was not generated for the "Policy-Capturing" method because it seemed more straightforward to simply use the regression model generated for each participant over all nine factors for the 50 hypothetical job profiles as a method for creating a differentially weighted model over all three components. Two differentially weighted models using the "Fishbein-Ajzen" and semantic differential methods also were created. Differential weights for the first model were developed by separately regressing the Army and Civilian Job mean intent ratings for the 33 participants over their corresponding attitudinal normative and affective component scores, that is, by creating two regression equations. Differential weights for the second model were developed by regressing the mean intent ratings for each option for each of the 33 participants on their attitudinal, normative, and affective scores for the 66 cases to obtain one regression equation.

Examination of Table 9 indicates that the equally weighted, three-component, Fishbein-Ajzen model minimally improved prediction over that achieved with the equally weighted two-component model (i.e., 3 vs. 4 misses respectively) and, had the same prediction as the differentially weighted, two-component model. The equally weighted, three-component models developed with the "Importance" and "Rank and Compare" methods had the best prediction (i.e., 2 misses), but this was comparable to that achieved with the equally weighted, two-component models. Moreover, the predictability achieved by these two equally weighted, three-component models was better than that achieved by any of the differentially weighted, three-component models. In fact, it was significantly better (p < .05) than that achieved with the policy-capturing method (i.e., 2 vs. 6 misses).

In closing this subsection of the results, it is important to make three points. First, all of the multicomponent models were extremely good predictors of the options with the highest mean intent ratings. The differentially weighted, three-component "Policy-Capturing" model was the worst predictor of mean intent, and it had a hit rate of 82%. The equally and differentially weighted, two-component "Fishbein-Ajzen" model had hit rates of 88% and 91%, respectively. And the best multicomponent model, generated by both the "Importance" and "Rank and Compare" methods, had a hit rate of 94%. Second, even single-component models had high hit rates. In fact, the affective component alone had a hit rate of 91%.

As a result, a 100% hit rate was required for any multicomponent model to have predicted better than the affective component alone at a statistically significant level. Third, the relative predictability of various components obtained in this pilot study of the reenlistment decision replicates that found in an enlistment context. Specifically, Adel-

man, Pliske, and Lehner (in preparation) also found that: (a) the attitudinal component predicted better than the normative component; (b) the affective component predicted better than the attitudinal component; (c) both the equally and differentially weighted, attitudinal and normative component models predicted better than either component separately; and (d) neither an equally or differentially weighted, two- or three-component model significantly outpredicted the affective component alone.

One possible explanation for the lack of prediction of the three component models is that the Fishbein-Ajzen and the affective measures are redundant. That is, the attitudinal and normative ratings reflect a person's general affect, or perhaps a person's affective response is guided by attitudinal and normative factors as, for example, suggested by Bagozzi (1982) and Zajonc (1980). If this were true, then we would expect the equally weighted, Fishbein-Ajzen model and the affective component to make the same predictions.

Two stepwise multiple-regression analyses were performed in an attempt to assess whether the affective component added any predictability beyond that achieved with the equally weighted, Fishbein-Ajzen model. The first analysis regressed the highest mean intent ratings for the 33 participants against two variables: the equally weighted attitudinal and normative component score, and the affective component score. The former was forced to enter the regression model first so that the affective component score would only be predicting residual intent. The regression coefficient on the affective component was not significant. The second stepwise, multiple-regression analysis regressed the mean intent ratings for both career choices for all 33 participants against the equally weighted attitudinal and normative component score and the affective component score for all 66 cases. The equally weighted attitudinal and normative component score was again forced to enter the model first. The regression coefficient on the affective component was significant at the $p < .001$ level, thereby suggesting that the affective component was contributing something to predictability beyond that achieved with the Fishbein-Ajzen model.

Assessing the Importance of the Individual Components

The "hit rate" analysis presented in Table 9 suggests that the affective component was the most important single predictor of intent with our sample, and that the attitudinal and normative components were second and third, respectively. Two sets of three multiple-regression analyses each were performed to assess whether the regression coefficient for each of the three components was at a statistically significant level when it entered the regression model. Statistical significance was considered a surrogate for importance in these analyses.

The first set of multiple-regression analyses used the attitudinal and normative component weights and scores obtained with the Fishbein-Ajzen method and the affective component scores obtained with the semantic differential. The first analysis regressed the mean intent ratings for all 66 cases (33 participants x 2 options) on the separate attitudinal normative, and affective component scores. All three components were statistically

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significant when they entered the "regression" model. Specifically the af-
fective and normative components entered at p - .002, the attitudinal com-
ponent entered at p - .032, and the (adjusted) squared multiple-regression
coefficient was .64. The second analysis regressed only the mean intent
ratings for the Army option on the corresponding individual component
scores. The only significant regression coefficient was on the affective
component (p - .004). Third, only the mean intent ratings for the Civilian
Job option were regressed on the corresponding individual component scores.
Again, only the affective component had a significant regression coeffi-
cient (p - .05); the regression coefficient on the attitudinal component
did, however, approach significance (p - .065).

In order to determine whether the method used for obtaining the
weights on the attitudinal and normative component attributes affected the
results, the weights obtained using the "Rank and Compare" method were used
in the second set of three multiple regression analyses; the belief values
obtained using the Fishbein-Ajzen method and the affective component values
based on the semantic differential were used again. In contrast to the
results obtained using the the Fishbein-Ajzen weights, only the regression
coefficient for the affective component reached a statistically significant
level (p < .0001) for the multiple-regression analysis over all 66 cases.
As with Fishbein-Ajzen weights, only the affective component had a statis-
tically significant coefficient for the multiple-regression analysis for
the 33 Army cases using the "Rank and Compare" weights. And for the mul-
tiple regression analysis for the 33 Civilian cases, both the attitudinal
and affective component coefficients were statistically significant (p -
.028 and .05 respectively).

In total, the multiple-regression analyses agree with the "hit rate"
analysis in indicating that the affective component was the most important
single component predictor of intent for our sample of 33 soldiers. This
conclusion is perfectly consistent with the impression the first two
authors of this report reached immediately after the open-ended discussions
with the participants. Twenty-seven of the 33 participants intended to
leave the Army. During the discussion period, it became quite clear that
many of the soldiers' expectations upon enlistment had not been met in the
Army, and some of the participants were clearly bitter about it. In con-
trast, it is not as clear whether the attitudinal or normative component
model is next in importance. (Again, it should be remembered that both
components were, independently, good predictors of intent in the "hit rate"
analysis, with the normative actually being better than the attitudinal
component with the "bar-graph" scoring approach to obtaining the belief
values.)

The authors were intrigued by the finding that the affective com-
ponent was the only significant component for the Army option in both sets
of multiple-regression analyses, and that, in addition to the affective
component, the attitudinal component approached and reached significance in
the multiple regression analysis for the Civilian option. Since the Army
option had the lowest mean intent rating for 27 of the 33 participants, we
wondered whether different components would be better at predicting the op-
tion with the lowest and highest mean intent rating. Two specific
multiple-regression analyses were conducted, one regressing the

participants' lowest mean intent ratings (27 were for the Army option and 6 were for the Civilian option) and one regressing the participants' highest mean ratings on the three component scores using Fishbein-Ajzen weights and scores and the semantic differential. The affective component was the only component to enter the regression equation for the lowest mean intent ratings with the alpha to enter at .05; the R^2 was .476. In contrast, the attitudinal component was the only component to enter the regression equation for the highest mean intent ratings with the alpha to enter at .05; the R^2 was, however, only .12. The results of the latter regression must be taken with caution because of the low R^2; however, the results are quite interesting and should be pursued in future research.

A Second Dependent Measure of Predictability

From a modeling perspective, the policy-capturing method provided us with a second approach to evaluating the predictability of alternative multicomponent models. This was accomplished by using the concept of "cross validation." Specifically, the multiple-regression equation was calculated using only 50 of the 70 hypothetical job situations. The regression weights were then applied to the other 20 profiles to obtain predicted judgments (Y_{ij}). The predicted judgments (Y_{ij}) for the 20 profiles were then correlated with the actual judgments (Y_{ij}) for these profiles in order to obtain a dependent measure indicating the adequacy of the linear, additive model (Equation (3)) generated by the policy-capturing technique. The relative weights generated by the other techniques also were applied to the 20 job situations, and their respective predicted judgments were correlated with the respondent's actual judgments. For a given respondent, the technique with the highest Pearson product moment correlation coefficient represented the technique that generated the best linear, additive reenlistment decision model for that individual. A one-way analysis of variance analysis (ANOVA) and paired comparison tests were then performed using the correlation coefficients as the dependent measures to determine which measurement technique, on the average, generated the best linear, additive enlistment decision model (e.g., see Cook and Stewart, 1975).

In particular, the predictability of the nine different additive models were evaluated against each other. Two were policy-capturing models: one incorporated the affective component by using the regression coefficients for dummy variables representing the Army and Civilian Job, and one represented only the attitudinal and normative component model by using only the regression coefficients on the seven attitudinal and normative attributes and a constant. Three equally, weighted attitudinal and normative component models were tested by using the attribute weights generated by the "Fishbein-Ajzen", "Importance", and "Rank and Compare" methods, and equal weights on the attitudinal and normative components. Two differentially weighted, attitudinal and normative component models also were tested: one model used the weights based on the separate multiple regressions for the 33 Army and 33 Civilian Job mean intent ratings, and one used the weights based on the multiple regression for all 66 mean intent ratings. Finally, two differentially weighted multicomponent models incorporating the affective component were tested: both incorporated the semantic differential judgments when developing the multiple-regression

equations based on the (a) 33 Army intent judgments and 33 Civilian Job judgments, and (b) 66 total intent judgments.

The one-way ANOVA comparing the Z-transformed, Pearson product moment correlations for the nine models' predictions and the participants' actual judgments for the 20 hypothetical job situations used in the cross validation was significant [F (8,256) $-$ 12.16, p<.001)]. Paired comparison tests were performed to test the significance between the mean values for the nine models. Both policy-capturing models resulted in higher "cross-validation" correlations than those for all other methods (p < .005 for all tests). In addition, the correlation for the policy capturing model with the affected component was significantly higher than that for the model without the affective component [$\bar{r}_z$ $-$ .985 vs. $\bar{r}_z$ $-$ .845, respectively, F(1,32) $-$ 6.52, MS_H $-$ .652, MS_e $-$ .096 P $-$ 014], again demonstrating the importance of the affective component. (Note: The mean test-retest correlation for the 14 hypothetical job situations, over the 33 participations was .624, which is clearly statistically greater than zero and reasonably higher for a policy-capturing approach.) The attitudinal and normative component model generated with the Fishbein-Ajzen method resulted in a significantly higher correlation than that generated with "Importance" weights [$\bar{r}_z$ $-$ .543 vs $\bar{r}_z$ $-$ .442, F(1,32 $-$ 8.814, MS_h $-$ .569, MS_e $-$ .065, p $-$ .006], and, a significantly higher correlation than the three-component model generated by regressing the intent judgments over all 66 cases [$\bar{r}_z$ $-$ .543 vs $\bar{r}_z$ $-$ .461, F(1,32) $-$ 9.43, MS_h $-$ .369, MS_e $-$ .039, p $-$ .004]. None of the other comparisons was statistically significant.

The results presented in this subsection of the report, where "predictability" was operationalized in terms of a model's ability to predict the participant's actual judgments for 20 hypothetical job situations, suggests that policy capturing is superior to the other methods for obtaining the weights in an additive, multicomponent model. These results differ somewhat from those obtained earlier, where "prediction" was operationalized in terms of the percentage of participants for which the model predicted the career choice with the highest mean intent rating. In that analysis (see Table 9), all multicomponent models generated with any of the other three weighting methods resulted in better prediction than that generated with policy capturing. Moreover, the "hit rate" for the equally weighted, attitudinal and normative component models generated with the "Rank and Compare" method, and that for the equally weighted, three-component models generated with the "Importance" and "Rank and Compare" methods, were statistically better than that achieved with the "Policy-Capturing" method.

In an effort to understand the reasons for the different results, we examined the weights for the attitudinal and normative attributes generated by the different methods. (The affective component was not considered because both approaches to operationalizing prediction had demonstrated the importance of this component.) In particular, we rescaled the weights generated by each method so that they summed to 1.0 over the seven attributes. Table 10 presents the mean rank order of the relative weights over the seven attributes (the lower the number, the higher ranking) for 6 sets of weights: the one set generated by the Fishbein-Ajzen method; the two sets generated by the "Importance" method, (i.e., one for the Army option, and

one for the Civilian Job option); the one set for the "Rank and Compare"
method; and two sets for the policy-capturing method, where one was the
(rescaled) averaged weight over the 33 participants, and one was the
(rescaled) regression weights generated by regressing the averaged judg-
ments of the 33 participants over the attribute values for the 50
hypothetical job situations. The mean rank order of the six sets of rela-
tive weights for the seven attributes is also presented in Table 10. Ex-
amination of Table 10 indicates considerable agreement in the rank orders
generated by different methods. In particular, "pay & benefits", "quality
of life", and "job satisfaction" were clearly the three most important at-
tributes for all methods.

Table 10

Mean Rank Order of the Weights on the Attitudinal
and Normative Attributes for Each Method

	Fish-bein/ Aizen	Import. A	Import. C	Rank & Compare	Policy Capturing (avg wts)	Policy Capturing (avg jdgs)	Mean (not inc PC avg model)
Pay & Benefits	3	1	1	1	1	1	1.4
Job Satisfaction	1	3	2	2	3	3	2.2
Serving Country	4	3	7	6	5	5	5.0
Quality of Life	1	2	2	3	2	2	2.0
Spouse's Opinion	6	6	4	4	6	4	6.0
Parents' Opinion	5	5	5	5	7	6	6.6
Peers' Opinion	7	7	6	7	4	6	7.4

Table 11 presents the mean relative weights for the methods in the
same order that the rank orders are presented in Table 10. Examination of
Table 11 shows that the (summed) mean, relative weight on the four at-
titudinal attributes, and on the three corresponding normative attributes,
were reasonably similar over all methods. However, the mean relative
weight for "pay and benefits" generated by the policy-capturing method is
considerably larger than that generated by any of the other methods. It is
most likely that this difference is the principal reason why we obtained
different results depending on how we operationalized prediction. We
reexamined the ranges for the attribute values used in generating the
hypothetical job profiles and, upon reflection, we now feel that the range
of $5,000 to $30,000, particularly the upper limit, was too large for our
sample of soldiers, given that the average total pay for an E-3 is es-
timated to be $15,668. We would hypothesize that future research using an
upper limit of $20,000 on "pay and benefits" would result in a lower mean
weight on this attribute and, in turn, more similar results for the two ap-
proaches for operationalizing intent. The most straightforward way to
address prediction is, of course, to also use participants' actual behavior
(i.e., did they reenlist or not) as the principal dependent variable in fu-
ture research because it is the prediction of greatest interest to the
Army.

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Table 11

Mean Rank Order of the Weights on the Attitudinal
and Normative Attributes for Each Method

	Fishbein Ajzen	Importance		Rank & Compare	Policy Capturing (avg wts)	Policy Capturing (av jdgs)
		Army	Civilian			
Pay & Benefits	.207	.205	.225	.221	.60	.591
Job Satisfaction	.227	.168	.206	.210	.07	.077
Serving Country	.124	.167	.068	.076	.06	.058
Quality of Life	.222	.168	.205	.195	.11	.124
Mean Over Atti. Attr.	.780	.726	.704	.702	.80	.789
Spouse's Opinion	.077	.092	.122	.139	.06	.061
Parents' Opinion	.092	.106	.098	.097	.04	.045
Peers' Opinion	.051	.075	.075	.062	.06	.044
Mean Over Norm. Attr.	.22	.274	.295	.298	.20	.211

DISCUSSION

Although the research described herein was only a pilot study, the results were extremely encouraging regarding the viability of a multicomponent decision-modeling approach to the Army reenlistment decision. Specifically, the pilot study indicated that the attitudinal, normative, and affective components were separate, but related predictors of intent. Each predictor was a significant predictor of intent. Consistent with previous research for an enlistment task, the importance of these components took the following rank order: affect, attitudinal, and normative. Finally, all instruments appeared to predict intent well. However, the relative predictability of different instruments (and components) may depend on how one operationalizes "prediction."

The pilot study does, of course, suffer from limitations that need to be addressed in future research. First, we did not measure reenlistment behavior in the pilot study, just intent. The viability of a multicomponent decision-modeling approach for predicting Army reenlistment behavior is, of course, what is of the greatest concern; consequently, behavior should be measured in future research. Second, we had a small, non-representative sample in that only 6 of the 33 participants planned to reenlist. Future research obviously needs to include a statistically-based, representative survey of soldiers, officers as well as enlisted personnel, within the "reenlistment window" in order to assess the generalizability of the findings. Third, we did not administer other questionnaires that might help explain the obtained results. In particular, 15 of the 33 participants were married. However, we had no questionnaires focusing on "family satisfaction in the Army" to help us better understand married personnel's responses. In addition, the discussions at the end of the sessions suggest that affect was an extremely strong predictor because many of the respondents had not had their expectations upon entering the Army fulfilled in their term of service. However, we did not have any questionnaires measuring "expectation fulfillment," so we cannot test this hypothesis. Such additional questionnaires are needed to better understand the underlying causes driving the multicomponent decision model's predictions, and for the Army to take actions to foster reenlistment.

Future research should also test the adequacy of multicomponent decision models that are more complex than additive models and generated by statistical methods other than multiple-regression analysis. In particular, we recommend the investigation of causal modeling methods using path analysis, for example as may be implemented using the LISREL software package, to develop multicomponent decision models for the reenlistment decision. Bagozzi (1982) has used such methods in developing the theoretical multicomponent model presented in Figure 3, which he refers to as a "volitional model." This model is an attempt to extend prior theoretical work of Fishbein and Ajzen (1975), Ryan and Bonfield (1980), and Triandis (1977), witness the quote from Bagozzi (1982, p. 581):
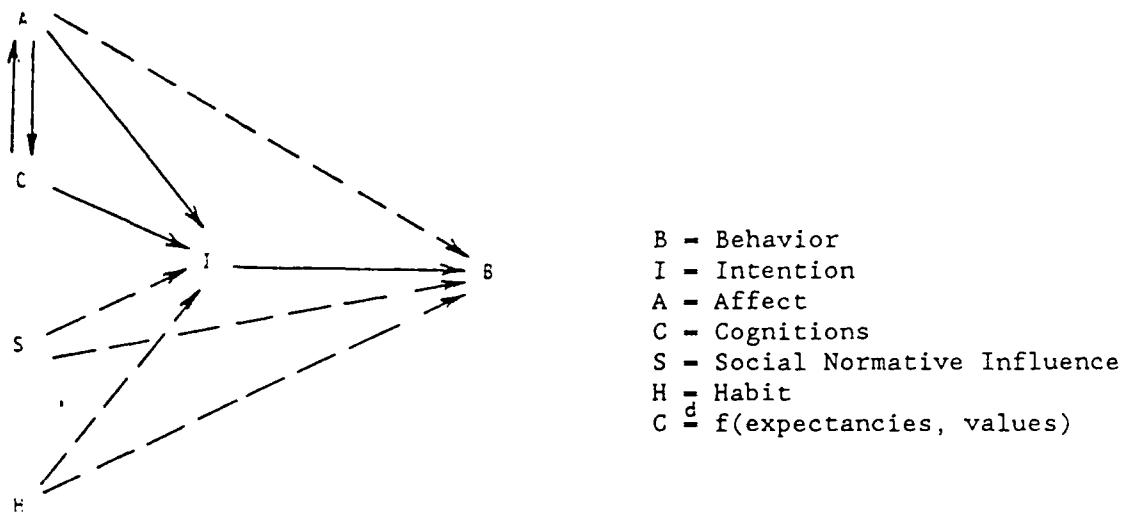
Figure 3. A pictorial representation of Bagozzi's (1982) multicomponent decision model.

B — Behavior
I — Intention
A — Affect
C — Cognitions
S — Social Normative Influence
H — Habit
C$_d$ = f(expectancies, values)

"Notice that the volitional model is proposed to be essentially the same as Fishbein's model except that cognitions (i.e., expectancy-value judgments) are hypothesized also to influence intentions in a direct way. Another difference from the Fishbein model is that expectancy-value judgments are represented through the extended true-score model rather than merely as the sum of products. Further, notice that the extended volitional model is similar to Triandis' theory except that cognitions are posited to influence affect directly, habit is permitted to determine intentions directly, affect is allowed to influence behavior directly, and social norms can also directly affect behavior. Again, cognitions are specified to consist of expectancy-value judgments expressed through the extended true score model."

Consequently, future research assessing the adequacy of a multicomponent decision model for the reenlistment decision has important theoretical value, as well as direct applicability to soldier's reenlistment decision and, in turn, Army reenlistment-oriented policies and decision making.

It should also be pointed out that future research can and should address Army reenlistment policy. For example, from a policy perspective, it is important to note for future research that the policy-capturing approach has two distinct advantages over the other techniques. First, the policy-capturing technique permits policy makers to obtain preference judgments for specific reenlistment policy options. That is, one could include profiles that represent actual options as well as those being considered or proposed for future implementation. By doing so, Army planners could obtain direct feedback as to the overall desirability of specific reenlistment options (or variations on a basic reenlistment theme) for specific

target audiences. Moreover, they could find out exactly which parts (i.e., factor values) the prospects like and dislike.

Second, the policy-capturing technique permits policy makers to directly address economic and noneconomic tradeoffs because the b weights (i.e., the raw score regression weights, not beta weights) in a multiple-regression equation indicate how much one unit of desirability (Y_s) is worth in terms of each factor's original (not standardized) scale values. Of course, the adequacy of this worth parameter, b_i, depends on the predictability of the multiple regression equation; consequently, multiple-regression equations with low multiple correlation coefficients (i.e., $R < .70$ in the judgment research literature) should not be considered for this tradeoff analysis. But, assuming that the R is high (e.g., we obtained a mean $R = .78$, adjusted for shrinkage in predictability), one could directly assess how much of one factor is required to compensate for a decrease of a certain amount in another factor and still result in the same predicted desirability rating.

Also, it is important to note that, from a policy perspective, the preference functions generated for individuals by all three measurement techniques can be inputs to a cluster analysis to partition the larger group of respondents into a few distinct preference groups, where the groups are defined by group-preference functions. It might be important to determine the relationship between these preference groups and other policy-oriented classifications when considering reenlistment policies. For example, if Moskos' (1982) hypothesis that there are two types of soldiers (the citizen soldier and the career soldier) is accurate, it should be represented by reasonably different preference groups (and functions) in the cluster analysis. If this result is indeed found, it might support Moskos' argument that the Army would benefit, at least for the purposes of recruitment and reenlistment, from a basic force restructuring that would have a dual-track program.

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EMPLOYMENT DECISION-MAKING STUDY

CONDUCTED BY:

DECISION SCIENCE CONSORTIUM, INC.
FALLS CHURCH, VIRGINIA

CONDUCTED FOR:

THE U.S. ARMY RESEARCH INSTITUTE

APRIL 1987

PURPOSE OF STUDY

LEARN HOW PEOPLE EVALUATE AND CHOOSE AMONG DIFFERENT JOB OPPORTUNITIES OR SITUATIONS.

RESULTS WILL HELP ARMY IMPROVE PROGRAMS AND POLICIES RELATED TO ARMY CAREER SATISFACTION.

HELP PARTICIPANTS CONSIDER THEIR REENLISTMENT DECISIONS IN AN INFORMED WAY.

ALL RESULTS ARE ANONYMOUS--THE ARMY WILL NOT KNOW WHAT RESPONSES INDIVIDUALS HAVE MADE.

PART 1: BACKGROUND INFORMATION

PLEASE ANSWER THESE QUESTIONS IN THE NUMBERED SPACES ON THE ANSWER PACKAGE.

1. YOUR AGE?

2. YOUR SEX?

3. YOUR MOS?

4. YOUR CURRENT GRADE?

5. HOW LONG IN THE ARMY?

6. ARE YOU MARRIED?

7. DO YOU HAVE CHILDREN?

8. IS YOUR SPOUSE IN THE ARMY?

9. HIGHEST SCHOOL GRADE COMPLETED?

10. WHAT WERE YOU DOING JUST PRIOR TO ENTERING THE ARMY?

    - Working full time
    - Working part time
    - In school full time
    - In school part time
    - Unemployed

11. WHEN DOES YOUR CURRENT TERM OF SERVICE END?

PART 2: CAREER PLANS

12. WHEN YOU FINALLY LEAVE THE ARMY, HOW MANY <u>TOTAL</u> YEARS OF SERVICE DO YOU EXPECT TO HAVE?

13. WHEN YOU FINALLY LEAVE THE ARMY, WHAT PAY GRADE DO YOU THINK YOU WILL HAVE?

14. HOW LIKELY ARE YOU TO REENLIST AT THE END OF YOUR CURRENT TERM OF SERVICE?

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|-----|-------|---|---|----|------|------|------|---|---|---|----|-----|
0     1       2   3   4    5      6      7   8   9   10
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| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

NO CHANCE   LESS LIKELY   UNSURE   MORE LIKELY   ABSOLUTELY
OF REENLIST-   TO REENLIST   THAN NOT TO   CERTAIN TO
MENT   THAN NOT   REENLIST   REENLIST

15. SUPPOSE YOU WERE GUARANTEED AN ASSIGNMENT
    WHICH YOU FELT HAD A VERY HIGH QUALITY OF LIFE.
    HOW LIKELY WOULD YOU BE TO REENLIST AT THE END OF
    YOUR CURRENT TERM?

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|———————|———|——|——|———————|———————|———————|——|——|———————|———————|
0        1       2   3   4       5       6       7   8   9       10
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NO CHANCE	LESS LIKELY	UNSURE	MORE LIKELY	ABSOLUTELY
OF REENLIST-	TO REENLIST		THAN NOT TO	CERTAIN TO
MENT	THAN NOT		REENLIST	REENLIST

16. SUPPOSE YOU WERE GUARANTEED RETRAINING TO AN MOS IN WHICH YOU WOULD BE VERY SATISFIED WITH YOUR JOB. HOW LIKELY WOULD YOU BE TO REENLIST AT THE END OF YOUR CURRENT TERM?

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|——————|——————|——|——|——————|——————|——————|——|——|——————|——————|
0       1      2   3  4       5       6      7   8  9       10
```

NO CHANCE	LESS LIKELY	UNSURE	MORE LIKELY	ABSOLUTELY
OF REENLIST-	TO REENLIST		THAN NOT TO	CERTAIN TO
MENT	THAN NOT		REENLIST	REENLIST

17. IF YOU WERE GUARANTEED A BONUS OF $5,000, HOW LIKELY WOULD YOU BE TO REENLIST AT THE END OF YOUR CURRENT TERM?

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|————|————|——|——|————|————|————|——|——|————|
0    1    2  3  4    5    6    7  8  9    10
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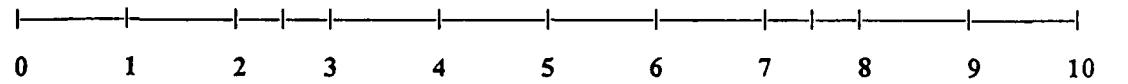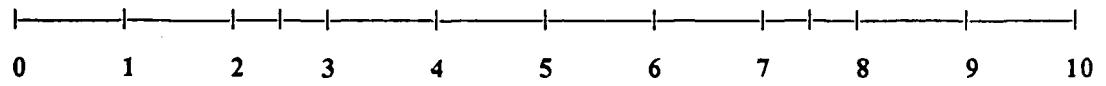
| NO CHANCE OF REENLIST-MENT | LESS LIKELY TO REENLIST THAN NOT | UNSURE | MORE LIKELY THAN NOT TO REENLIST | ABSOLUTELY CERTAIN TO REENLIST |

18. HOW LIKELY ARE YOU TO LEAVE THE ARMY AND ATTEND SCHOOL FULL TIME AT THE END OF YOUR CURRENT TERM OF SERVICE?

```
|——————|———|——|——|————|————|————|——|——|————|
0      1   2  3   4    5    6    7   8  9    10

NO CHANCE    LESS LIKELY      UNSURE      MORE LIKELY     ABSOLUTELY
             THAN NOT                     THAN NOT        CERTAIN
```

19. HOW LIKELY ARE YOU TO LEAVE THE ARMY AND TAKE A FULL-TIME JOB AT THE END OF YOUR CURRENT TERM OF SERVICE?

```
|———————|————|——|——|——————|————|——————|————|——|——————|——————|
0       1    2  3  4      5    6      7    8  9      10

NO CHANCE        LESS LIKELY       UNSURE      MORE LIKELY    ABSOLUTELY
                 THAN NOT                      THAN NOT       CERTAIN
```

PART 3: FACTORS INFLUENCING JOB CHOICE

WE ARE INTERESTED IN THREE SETS OF FACTORS THAT ARE RELEVANT TO JOB CHOICE:

CHARACTERISTICS OF THE JOB

- PAY
- JOB SATISFACTION
- SERVING COUNTRY, DOING SOMETHING IMPORTANT
- QUALITY OF LIFE

OPINIONS OF OTHERS

- SPOUSE
- PARENTS
- PEERS

JOB SETTING

- ARMY
- CIVILIAN

INSTRUCTIONS

PURPOSE: LEARN HOW PEOPLE EVALUATE DIFFERENT JOB
             OPPORTUNITIES OR SITUATIONS

YOU WILL BE PRESENTED WITH 70 HYPOTHETICAL JOBS, EACH
DESCRIBED IN TERMS OF 8 CHARACTERISTICS. YOU ARE TO
RATE EACH OF THESE JOBS--HOW ATTRACTIVE WOULD EACH
BE TO YOU--FROM 0 (VERY, VERY LOW RATING) TO 10 (VERY,
VERY HIGH RATING).

```
|-------|----|--|--|----|-------|-------|--|--|----|
0       1    2  3    4    5       6       7  8  9    10
```

NO CHANCE,	LESS LIKELY	UNSURE	MORE LIKELY	ABSOLUTELY,
I WOULD	THAN NOT		THAN NOT	I WOULD
CERTAINLY	TO TAKE		TO TAKE	CERTAINLY
NOT TAKE	THIS JOB		THIS JOB	TAKE THIS JOB
THIS JOB				

FACTOR 1: PAY AND BENEFITS

IN THE ARMY INCLUDES:

- BASIC PAY
- ALLOWANCES FOR FOOD AND HOUSING
     OR
  FOOD AND HOUSING
- HEALTH CARE
- RETIREMENT

AVERAGE TOTAL PAY FOR E3 IS $15,668

IN PRIVATE SECTOR INCLUDES:

- PAY
- HEALTH INSURANCE
- RETIREMENT

RANGE: FROM $5,000 TO $30,000 TOTAL PAY AND BENEFITS

FACTOR 2: JOB SATISFACTION

LIKE/DISLIKE MY JOB

JOB IS CHALLENGING/DULL

AM LEARNING SKILLS

SUPERVISOR IS GOOD/BAD

I AM TREATED FAIRLY AT WORK

I HAVE OPPORTUNITIES FOR PROMOTION

WORK IS TOO HARD/TOO EASY

RANGE: FROM VERY, VERY LOW (0) TO VERY, VERY HIGH (10)

VERY   **VERY**
VERY LOW   **VERY HIGH**

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|------|------|------|------|------|------|------|------|------|------|
0      1      2      3      4      5      6      7      8      9      10
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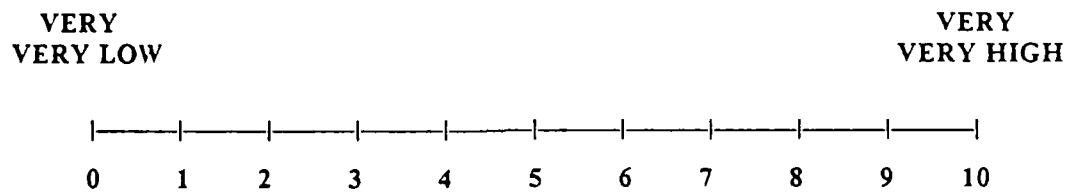
FACTOR 3: SERVING MY COUNTRY

THE COUNTRY CAN BE SERVED IN MANY WAYS

- DOING WORK THAT IS IMPORTANT TO THE NATION
- ACCEPTING RISK TO YOUR LIFE IN DEFENSE OF THE COUNTRY
- FULFILLING OBLIGATION TO COUNTRY

RANGE: FROM VERY, VERY LOW (0) TO VERY, VERY HIGH (10)

VERY
VERY LOW

VERY
VERY HIGH

```
 |----|----|----|----|----|----|----|----|----|----|
 0    1    2    3    4    5    6    7    8    9   10
```

FACTOR 4: QUALITY OF LIFE

CONSIDER:

- LOCATION
- HOUSING QUALITY
- RECREATION FACILITIES
- FAMILY LIFE
- FREEDOM
- STRUCTURE OF LIFE

BUT NOT FACTORS 1, 2, AND 3 DIRECTLY RELATED TO:

- PAY OR BENEFITS
- JOB SATISFACTION
- SERVING COUNTRY

RANGE: FROM VERY, VERY LOW (0) TO VERY, VERY HIGH (10)

| VERY | | | | | | | | | | VERY |
| VERY LOW | | | | | | | | | | VERY HIGH |

|—————|——|——|——|——|——|——|——|——|——|——|

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
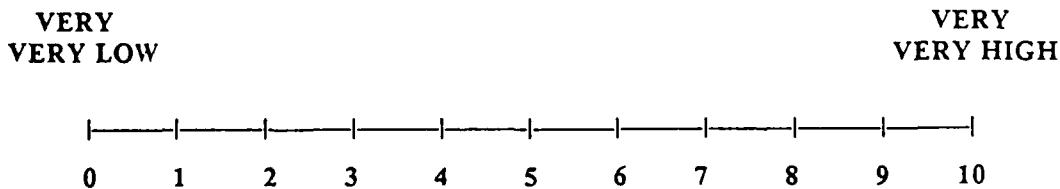
FACTOR 5: OPINION OF SPOUSE

THIS FACTOR REPRESENTS YOUR SPOUSE'S OVERALL OPINION
OF A JOB SITUATION.

WOULD SHE/HE THINK THIS WAS A GOOD JOB SITUATION FOR
YOU?

WOULD SHE/HE BE HAPPY WITH THIS OVERALL JOB
SITUATION?

VERY, VERY   VERY, VERY
UNFAVORABLE   FAVORABLE

```
├───┼───┼───┼───┼───┼───┼───┼───┼───┼───┤
0   1   2   3   4   5   6   7   8   9   10
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81
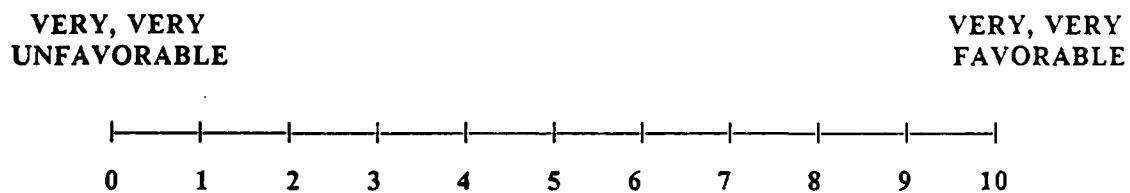
FACTOR 6: OPINION OF PARENTS

THIS FACTOR REPRESENTS YOUR PARENTS' OVERALL
OPINION OF A JOB SITUATION.

WOULD THEY THINK IT WAS A GOOD JOB SITUATION FOR
YOU?

WOULD THEY BE HAPPY WITH THIS OVERALL JOB SITUATION?

VERY, VERY   VERY, VERY
UNFAVORABLE   FAVORABLE

```
|———|———|———|———|———|———|———|———|———|———|
0    1    2    3    4    5    6    7    8    9    10
```

FACTOR 7: OPINION OF PEERS

THIS FACTOR REPRESENTS YOUR FRIENDS' AND CO-WORKERS' --BOTH IN THE ARMY AND OUT--OVERALL OPINION OF A JOB SITUATION.

WOULD THEY THINK IT WAS A GOOD JOB SITUATION FOR YOU?

WOULD THEY BE HAPPY WITH THIS OVERALL JOB SITUATION?

VERY, VERY
UNFAVORABLE

VERY, VERY
FAVORABLE

|---|---|---|---|---|---|---|---|---|---|---|
0   1   2   3   4   5   6   7   8   9   10
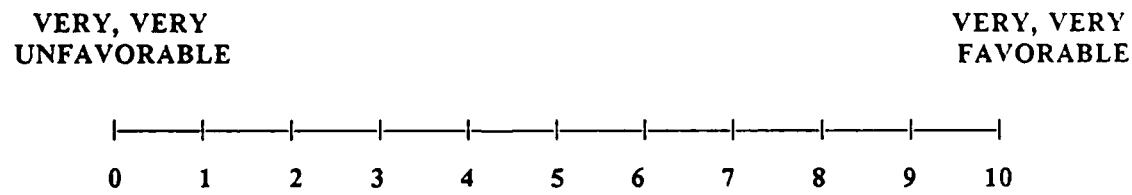
90. FILL IN THE LEVELS YOU EXPECT FOR EACH OF THE SEVEN JOB CHARACTERISTICS IF YOU REENLIST IN THE ARMY.

CATEGORIES

PAY AND BENEFITS

JOB SATISFACTION

SATISFACTION W/LIFE STYLE

SERVE COUNTRY

SPOUSE OPINION

PARENT OPINION

PEER OPINION

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0   1   2   3   4   5   6   7   8   9   10
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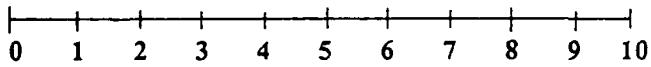
91. FILL IN THE LEVELS YOU EXPECT FOR EACH OF THE SEVEN JOB CHARACTERISTICS IF YOU TAKE A CIVILIAN JOB INSTEAD OF REENLISTING.

CATEGORIES

PAY AND BENEFITS

JOB SATISFACTION

SATISFACTION W/LIFE STYLE

SERVE COUNTRY

SPOUSE OPINION

PARENT OPINION

PEER OPINION

```
0   1   2   3   4   5   6   7   8   9   10
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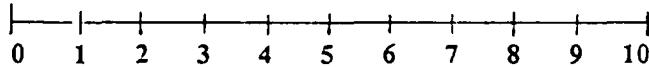
PART 4: THE IMPORTANCE OF JOB FACTORS

92. CONSIDER YOUR CURRENT JOB IN THE ARMY. HOW IMPORTANT ARE EACH OF THESE CHARACTERISTICS TO YOU AS YOU THINK ABOUT HOW MUCH YOU LIKE OR DISLIKE YOUR ARMY JOB SITUATION.

CHARACTERISTICS

- PAY AND BENEFITS
- JOB SATISFACTION
- SERVING COUNTRY
- QUALITY OF LIFE
- OPINION OF SPOUSE
- OPINION OF PARENTS
- OPINION OF PEERS

```
|----|----|----|----|----|----|----|----|----|----|
0    1    2    3    4    5    6    7    8    9    10
```

NOT AT ALL   SOMEWHAT   EXTREMELY
IMPORTANT   IMPORTANT   IMPORTANT
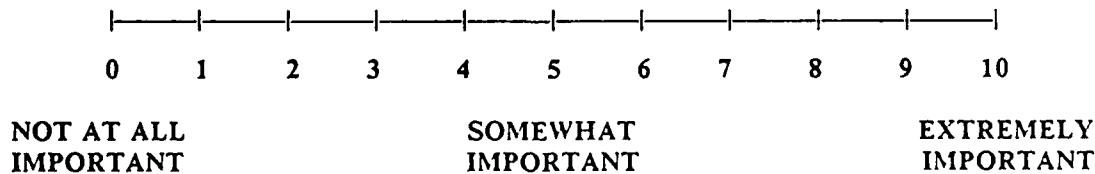
93. **IMAGINE THAT YOU HAD LEFT THE ARMY AND WERE LOOKING FOR A FULL-TIME CIVILIAN JOB. HOW IMPORTANT WOULD EACH OF THESE FACTORS BE TO YOU IN CHOOSING A JOB.**

JOB CHARACTERISTICS

- PAY AND BENEFITS
- JOB SATISFACTION
- SERVING COUNTRY
- QUALITY OF LIFE
- *OPINION OF SPOUSE*
- OPINION OF PARENTS
- OPINION OF PEERS

```
|----|----|----|----|----|----|----|----|----|----|
0    1    2    3    4    5    6    7    8    9    10
```

| NOT AT ALL | SOMEWHAT | EXTREMELY |
| IMPORTANT | IMPORTANT | IMPORTANT |
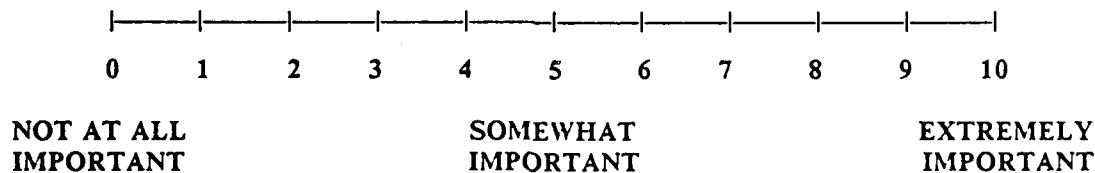
94. FROM THIS LIST OF 7 FACTORS, WHICH IS <u>MOST</u> <u>IMPORTANT</u> TO YOU AS YOU DECIDE WHETHER TO REENLIST IN THE ARMY OR LEAVE TO TAKE A CIVILIAN JOB.

- PAY AND BENEFITS
- JOB SATISFACTION
- SERVING COUNTRY
- QUALITY OF LIFE
- OPINION OF SPOUSE
- OPINION OF PARENTS
- OPINION OF PEERS

WRITE THAT FACTOR ON LINE 1 AND ASSIGN IT 100 POINTS.

WHICH OF THE REMAINING FACTORS IS SECOND MOST IMPORTANT? WRITE THAT FACTOR ON LINE 2. NOW ASSIGN IT POINTS BASED UPON YOUR SCORE FOR THE FIRST FACTOR. IF IT IS HALF AS IMPORTANT, GIVE IT A SCORE OF 50. IF IT IS 90% AS IMPORTANT, GIVE IT A SCORE OF 90.

95. **TAKING ALL THINGS INTO CONSIDERATION, I EXPECT TO REENLIST IN THE ARMY AFTER MY CURRENT TERM OF SERVICE ENDS.**

FALSE   UNCERTAIN   TRUE

├──────┼──────┼──────┼──────┼──────┼──────┼──────┼──────┼──────┼──────┤
0   1   2   3   4   5   6   7   8   9   10
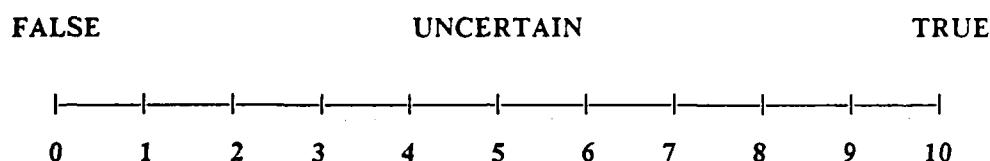
96. TAKING ALL THINGS INTO CONSIDERATION, I EXPECT TO TAKE A CIVILIAN JOB AFTER MY CURRENT TERM OF SERVICE ENDS.
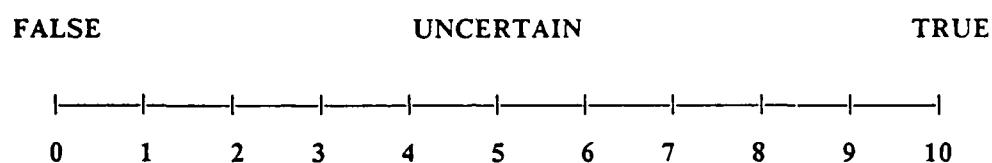
FALSE   UNCERTAIN   TRUE

|—————|—————|—————|—————|—————|—————|—————|—————|—————|—————|
0   1   2   3   4   5   6   7   8   9   10

97. FROM A PURELY EMOTIONAL PERSPECTIVE, HOW
SATISFIED OR DISSATISFIED WOULD YOU FEEL IF YOU
REENLISTED IN THE ARMY AT THE END OF YOUR
CURRENT TERM OF SERVICE?

```
├────┼────┼────┼────┼────┼────┼────┼────┼────┼────┤
 0    1    2    3    4    5    6    7    8    9   10

VERY                    UNSURE              VERY
DISSATISFIED                              SATISFIED
```

98. **FROM A PURELY EMOTIONAL PERSPECTIVE, HOW SATISFIED OR DISSATISFIED WOULD YOU FEEL IF YOU LEFT THE ARMY FOR A CIVILIAN JOB AT THE END OF YOUR CURRENT TERM OF SERVICE?**

```
├────┼────┼────┼────┼────┼────┼────┼────┼────┼────┤
0    1    2    3    4    5    6    7    8    9    10
```

VERY   UNSURE   VERY
DISSATISFIED   SATISFIED
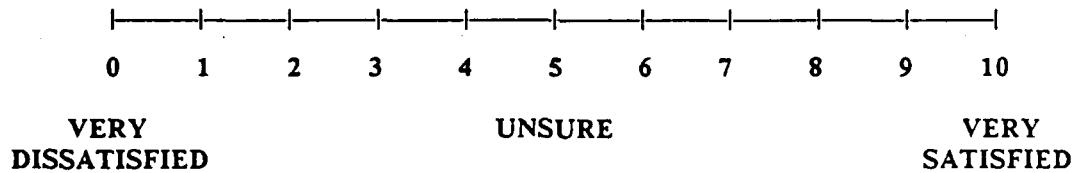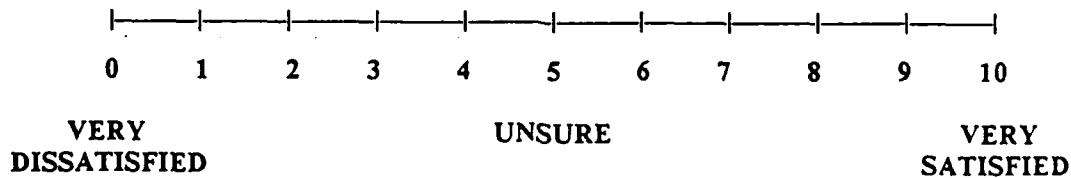
PART 5: FALSE <------------->TRUE

99. I AM SATISFIED WITH THE PAY AND BENEFITS I WOULD
RECEIVE IF I REENLISTED IN THE ARMY.

FALSE   UNCERTAIN   TRUE

|———|———|———|———|———|———|———|———|———|———|
0   1   2   3   4   5   6   7   8   9   10
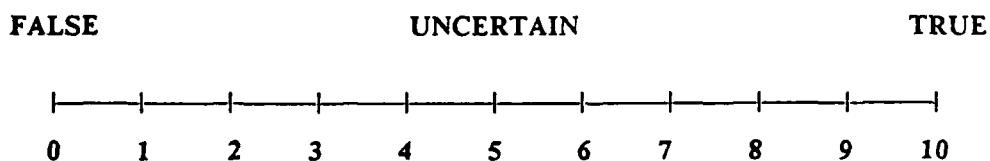
100. THE PAY AND BENEFITS I RECEIVE ARE VERY IMPORTANT TO ME.

FALSE   UNCERTAIN   TRUE

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|----|----|----|----|----|----|----|----|----|----|
0    1    2    3    4    5    6    7    8    9    10
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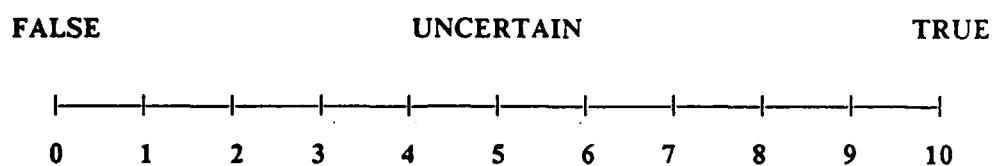
101. MY WIFE (OR HUSBAND) THINKS I SHOULD REENLIST IN THE ARMY.

FALSE   UNCERTAIN   TRUE

|—————|—————|—————|—————|—————|—————|—————|—————|—————|—————|
0   1   2   3   4   5   6   7   8   9   10

95
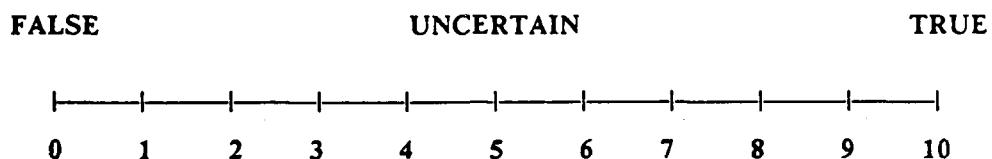
102. MY PARENTS THINK I SHOULD REENLIST IN THE ARMY.

FALSE   UNCERTAIN   TRUE

|—————|—————|—————|—————|—————|—————|—————|—————|—————|—————|
0   1   2   3   4   5   6   7   8   9   10
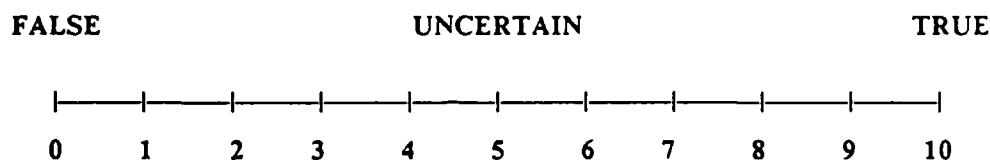
103. MY PEERS THINK I SHOULD REENLIST IN THE ARMY.

FALSE   UNCERTAIN   TRUE

|—————|—————|—————|—————|—————|—————|—————|—————|—————|—————|

0   1   2   3   4   5   6   7   8   9   10
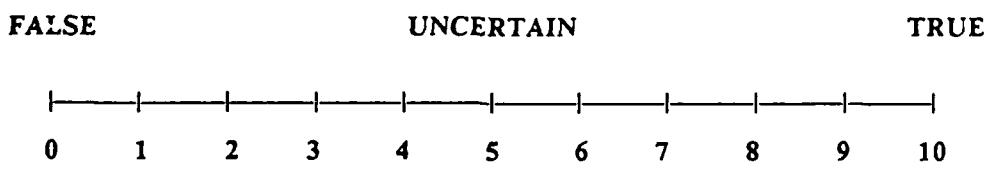
104. MY WIFE (OR HUSBAND) THINKS WE WOULD BE BETTER OFF IF I TOOK A CIVILIAN JOB.

FALSE   UNCERTAIN   TRUE

```
|----|----|----|----|----|----|----|----|----|----|
0    1    2    3    4    5    6    7    8    9    10
```
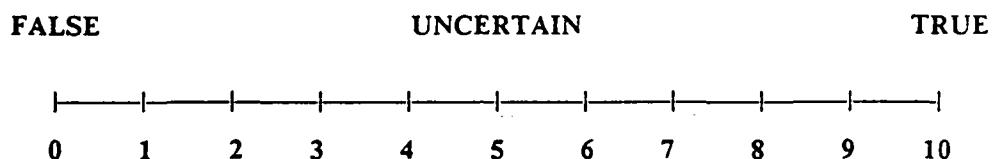
105. MY PARENTS THINK I WOULD BE BETTER OFF IF I TOOK A CIVILIAN JOB.

FALSE   UNCERTAIN   TRUE

|—————|—————|—————|—————|—————|—————|—————|—————|—————|—————|
0   1   2   3   4   5   6   7   8   9   10
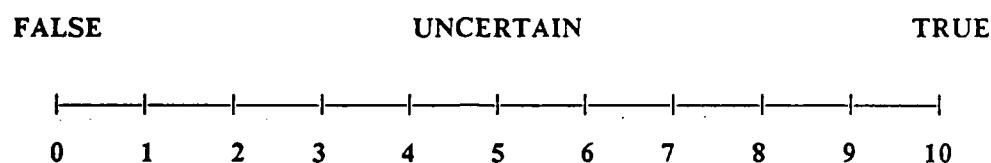
106. MY PEERS THINK I WOULD BE BETTER OFF IF I TOOK A CIVILIAN JOB.

FALSE   UNCERTAIN   TRUE

|—————|—————|—————|—————|—————|—————|—————|—————|—————|—————|

0   1   2   3   4   5   6   7   8   9   10

107. IT IS IMPORTANT TO ME TO FOLLOW THE THINKING OF MY SPOUSE.

```
FALSE                    UNCERTAIN                    TRUE

    |----|----|----|----|----|----|----|----|----|----|
    0    1    2    3    4    5    6    7    8    9    10
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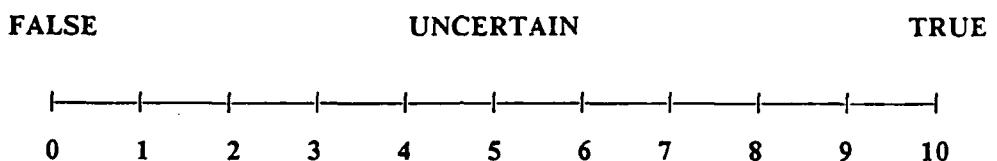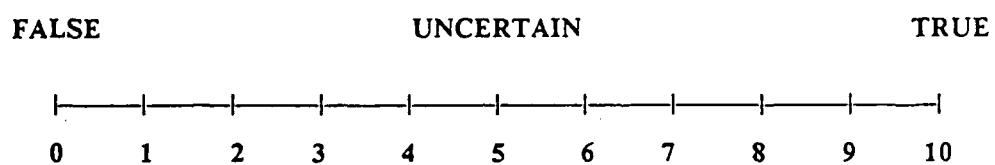
108. IT IS IMPORTANT TO ME TO FOLLOW THE THINKING OF MY PARENTS.

| FALSE | | | | | UNCERTAIN | | | | | TRUE |

```
|—————|—————|—————|—————|—————|—————|—————|—————|—————|—————|
0     1     2     3     4     5     6     7     8     9     10
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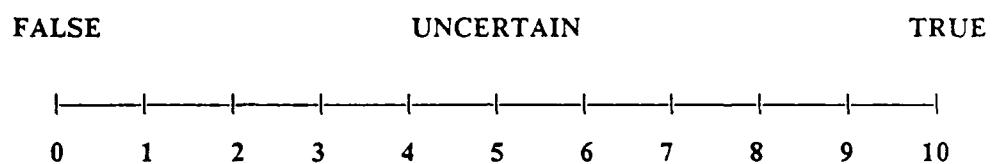
109. IT IS IMPORTANT TO ME TO FOLLOW THE THINKING OF MY PEERS.

```
FALSE                        UNCERTAIN                        TRUE

  |----|----|----|----|----|----|----|----|----|----|
  0    1    2    3    4    5    6    7    8    9    10
```
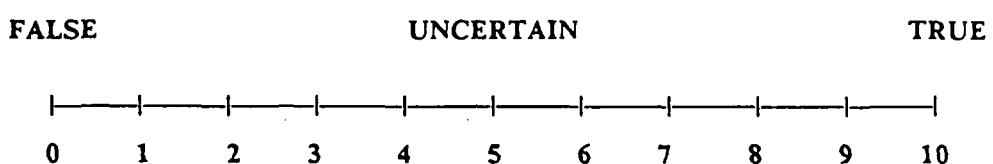
110. BEING SATISFIED WITH MY LIFE STYLE IS IMPORTANT TO ME.

FALSE   UNCERTAIN   TRUE

|—————|—————|—————|—————|—————|—————|—————|—————|—————|—————|
0   1   2   3   4   5   6   7   8   9   10
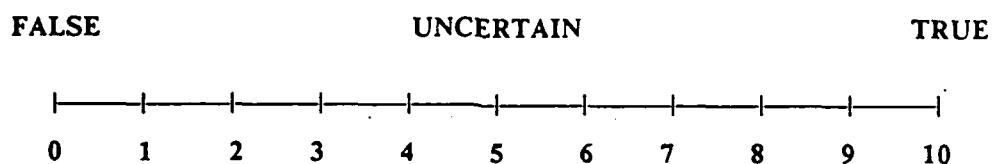
111. BEING SATISFIED WITH MY JOB IS VERY IMPORTANT TO ME.

FALSE   UNCERTAIN   TRUE

```
|----|----|----|----|----|----|----|----|----|----|
0    1    2    3    4    5    6    7    8    9    10
```
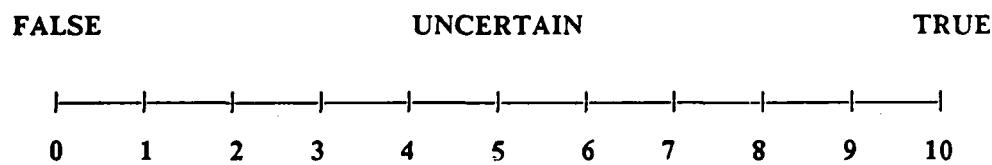
112. I WOULD BE SATISFIED WITH THE PAY AND BENEFITS I WOULD RECEIVE IF I TOOK A CIVILIAN JOB.

```
FALSE                    UNCEP[AIN                    TRUE

 |----+----+----+----+----+----+----+----+----+----|
 0    1    2    3    4    5    6    7    8    9    10
```
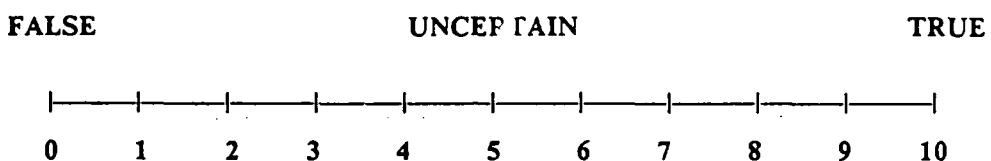
113. I WOULD ENJOY PERFORMING MY JOB IF I TOOK A CIVILIAN JOB INSTEAD OF REENLISTING IN THE ARMY.

FALSE   UNCERTAIN   TRUE

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
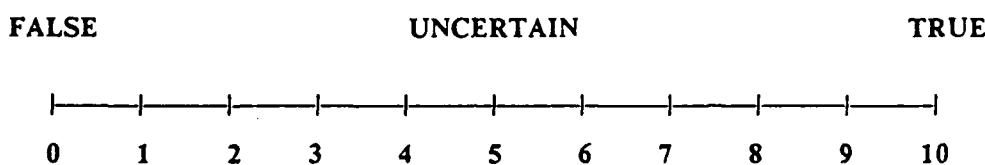
114. I WOULD ENJOY PERFORMING MY JOB IF I REENLISTED IN THE ARMY.

FALSE					UNCERTAIN					TRUE
0	1	2	3	4	5	6	7	8	9	10
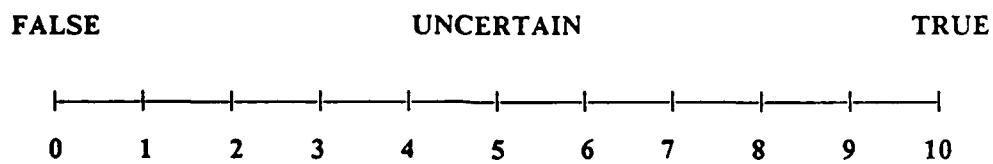
115. IF I REENLISTED IN THE ARMY, I WOULD BE SATISFIED WITH MY LIFE STYLE.

FALSE   UNCERTAIN   TRUE

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
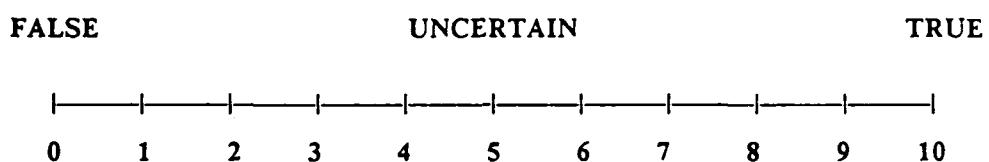
116. IF I TOOK A CIVILIAN JOB, I WOULD BE SATISFIED WITH MY LIFE STYLE.

FALSE   UNCERTAIN   TRUE

```
|----|----|----|----|----|----|----|----|----|----|
0    1    2    3    4    5    6    7    8    9    10
```
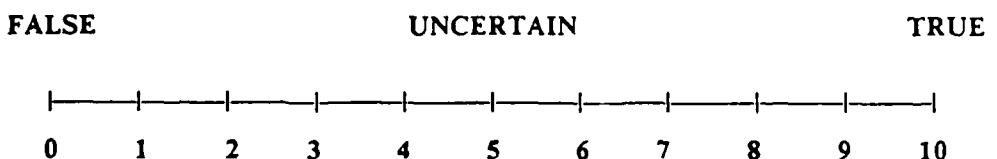
117. HAVING A SATISFYING LIFE STYLE IS VERY IMPORTANT TO ME.

```
FALSE                        UNCERTAIN                    TRUE

|------|------|------|------|------|------|------|------|------|------|
0      1      2      3      4      5      6      7      8      9      10
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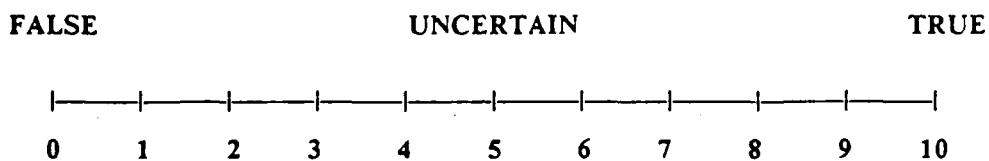
118. I WOULD BE SERVING MY COUNTRY IF I REENLISTED IN THE ARMY.

FALSE   UNCERTAIN   TRUE

|—————|————|————|————|————|————|————|————|————|————|

0   1   2   3   4   5   6   7   8   9   10
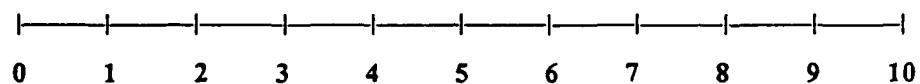
119. **EVEN IF I DIDN'T REENLIST, I WOULD BE SERVING MY COUNTRY THROUGH MY CIVILIAN JOB.**

FALSE   UNCERTAIN   TRUE

|—————|——|——|——|——|——|——|——|——|——|
0   1   2   3   4   5   6   7   8   9   10
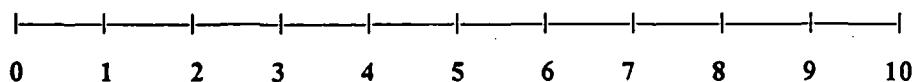
120. SERVING MY COUNTRY IS IMPORTANT TO ME.

FALSE   UNCERTAIN   TRUE

|———|———|———|———|———|———|———|———|———|———|
0   1   2   3   4   5   6   7   8   9   10
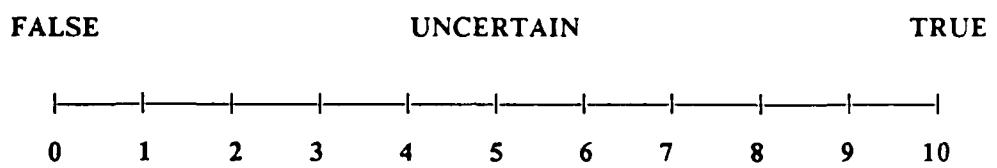
121. I INTEND TO REENLIST IN THE ARMY AT THE END OF MY CURRENT TERM OF SERVICE.

FALSE   UNSURE   TRUE

|———|———|———|———|———|———|———|———|———|———|

0   1   2   3   4   5   6   7   8   9   10
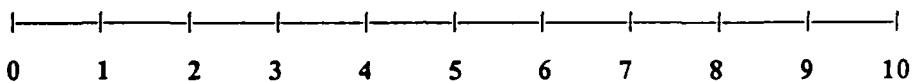
122. I INTEND TO TAKE A FULL-TIME CIVILIAN JOB AT THE END OF MY CURRENT ARMY TERM OF SERVICE.

FALSE   UNSURE   TRUE

```
|——|——|——|——|——|——|——|——|——|——|
0    1    2    3    4    5    6    7    8    9   10
```
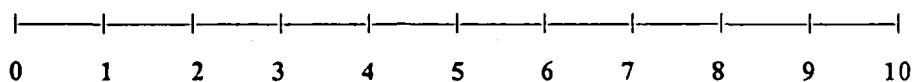
123. I INTEND TO ATTEND SCHOOL AT THE END OF MY CURRENT ARMY TERM OF SERVICE.
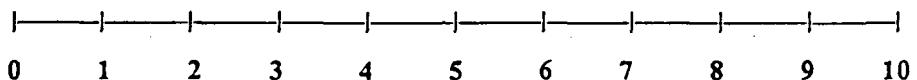
FALSE   UNSURE   TRUE

```
|—————|—————|—————|—————|—————|—————|—————|—————|—————|—————|
0     1     2     3     4     5     6     7     8     9     10
```

124. TAKING ALL THINGS TOGETHER, HOW SATISFIED OR DISSATISFIED ARE YOU WITH THE ARMY AS A WAY OF LIFE?

```
|——|——|——|——|——|——|——|——|——|——|
0   1   2   3   4   5   6   7   8   9   10

VERY                      UNSURE              VERY
DISSATISFIED                              SATISFIED
```
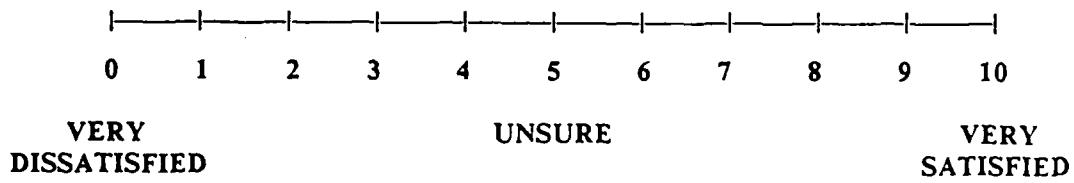
125. TAKING ALL THINGS TOGETHER, HOW SATISFIED OR DISSATISFIED DO YOU THINK YOU WILL BE WITH A CIVILIAN WAY OF LIFE?

```
 ├────┼────┼────┼────┼────┼────┼────┼────┼────┼────┤
 0    1    2    3    4    5    6    7    8    9    10
VERY                        UNSURE                      VERY
DISSATISFIED                                          SATISFIED
```
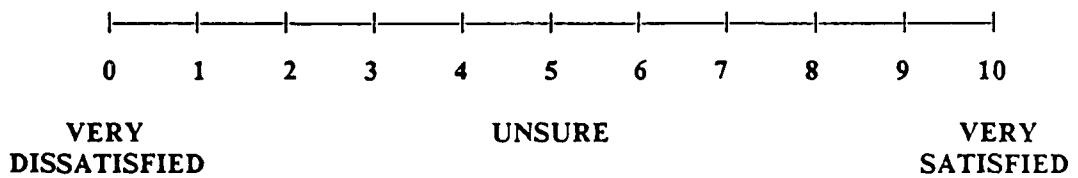
**MARK THE POINT ON THESE SCALES THAT EXPRESSES HOW YOU FEEL ABOUT REENLISTING IN THE ARMY AT THE END OF YOUR CURRENT TERM OF SERVICE.**

126.

LIKE   DISLIKE

0   1   2   3   4   5   6   7   8   9   10

127.

PLEASANT   UNPLEASANT

0   1   2   3   4   5   6   7   8   9   10

128.

APPROVE   DISAPPROVE

0   1   2   3   4   5   6   7   8   9   10

129.

AGREEABLE   DISAGREEABLE

0   1   2   3   4   5   6   7   8   9   10

130.

FAVORABLE   UNFAVORABLE

0   1   2   3   4   5   6   7   8   9   10

131.

ENJOYABLE   UNENJOYABLE

0   1   2   3   4   5   6   7   8   9   10

132.

GOOD   BAD

0   1   2   3   4   5   6   7   8   9   10
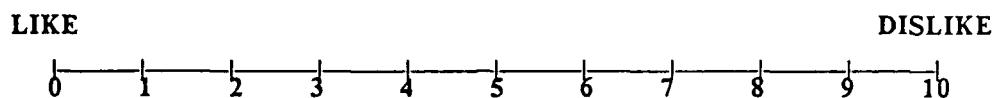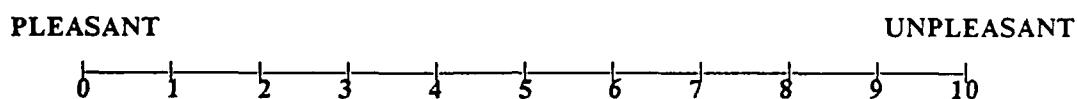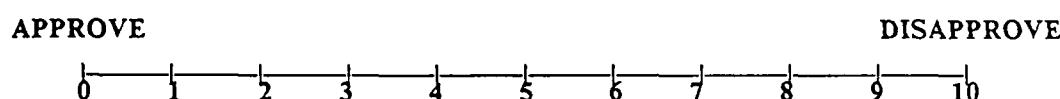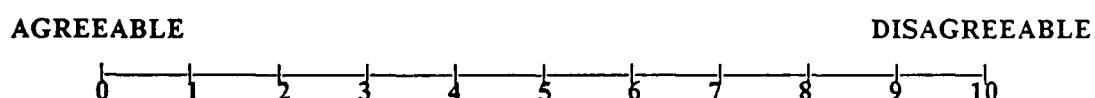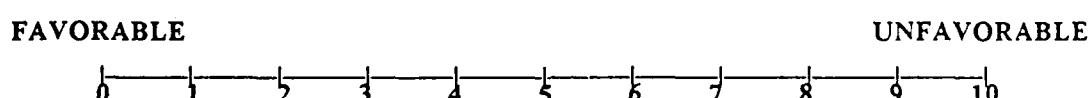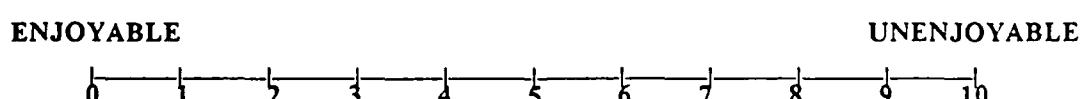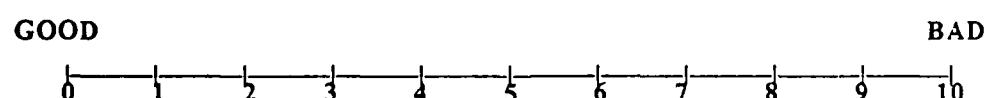
MARK THE POINT ON THESE SCALES THAT EXPRESSES HOW
YOU FEEL ABOUT LEAVING THE ARMY FOR A CIVILIAN JOB AT
THE END OF YOUR CURRENT TERM OF SERVICE.

133.

LIKE   DISLIKE

```
|----+----+----+----+----+----+----+----+----+----|
0    1    2    3    4    5    6    7    8    9    10
```
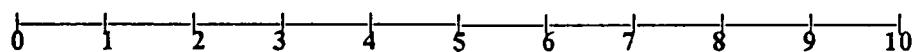
134.

PLEASANT   UNPLEASANT

```
|----+----+----+----+----+----+----+----+----+----|
0    1    2    3    4    5    6    7    8    9    10
```
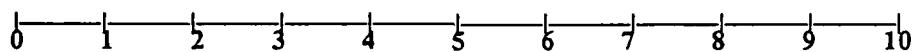
135.

APPROVE   DISAPPROVE

```
|----+----+----+----+----+----+----+----+----+----|
0    1    2    3    4    5    6    7    8    9    10
```
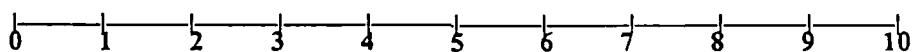
136.

AGREEABLE   DISAGREEABLE

```
|----+----+----+----+----+----+----+----+----+----|
0    1    2    3    4    5    6    7    8    9    10
```
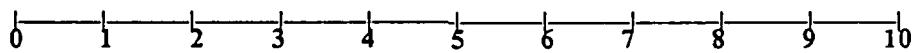
137.

FAVORABLE   UNFAVORABLE

```
|----+----+----+----+----+----+----+----+----+----|
0    1    2    3    4    5    6    7    8    9    10
```

138.

ENJOYABLE   UNENJOYABLE

```
|----+----+----+----+----+----+----+----+----+----|
0    1    2    3    4    5    6    7    8    9    10
```

139.

GOOD   BAD

```
|----+----+----+----+----+----+----+----+----+----|
0    1    2    3    4    5    6    7    8    9    10
```

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140. HOW PLEASED OR DISPLEASED WOULD YOU FEEL IF YOU REENLISTED IN THE ARMY AT THE END OF YOUR CURRENT TERM OF SERVICE?

```
|———|———|———|———|———|———|———|———|———|———|
0    1    2    3    4    5    6    7    8    9    10
```

VERY   UNSURE   VERY
DISPLEASED   PLEASED

141. HOW PLEASED OR DISPLEASED WOULD YOU FEEL IF YOU LEFT THE ARMY FOR A CIVILIAN JOB AT THE END OF YOUR CURRENT TERM OF SERVICE?

```
 |——|——|——|——|——|——|——|——|——|——|
 0    1    2    3    4    5    6    7    8    9   10

VERY                      UNSURE                  VERY
DISPLEASED                                        PLEASED
```